

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. Contract ID Code Cost-Plus-Incentive-Fee		Page 1 Of 29	
2. Amendment/Modification No. P00004		3. Effective Date 2003MAR28		4. Requisition/Purchase Req No. SEE SCHEDULE		5. Project No. (If applicable)	
6. Issued By TACOM SFAE-GCS-LAV-P LINDA PASSERI (586)574-3914 WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: PASSERIL@TACOM.ARMY.MIL		Code W56HZV		7. Administered By (If other than Item 6) DCMA DALLAS 1200 MAIN ST DALLAS, TX 75202-4399		Code S4402A	
				SCD C PAS NONE ADP PT HQ0339			
8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) RAYTHEON COMPANY 2501 W. UNIVERSITY DRIVE P.O. BOX 801, M/S 8064 MCKINNEY TX 75070-0801 TYPE BUSINESS: Large Business Performing in U.S.				<input type="checkbox"/>		9A. Amendment Of Solicitation No.	
				<input type="checkbox"/>		9B. Dated (See Item 11)	
				<input checked="" type="checkbox"/>		10A. Modification Of Contract/Order No. DAAE07-02-C-M001	
				<input type="checkbox"/>		10B. Dated (See Item 13) 2002MAY31	
Code 96214		Facility Code					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. Accounting And Appropriation Data (If required) ACRN: AC NET INCREASE: \$386,800.00							
13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS							
KIND MOD CODE: C It Modifies The Contract/Order No. As Described In Item 14.							
<input type="checkbox"/>		A. This Change Order is Issued Pursuant To: The Contract/Order No. In Item 10A.				The Changes Set Forth In Item 14 Are Made In	
<input type="checkbox"/>		B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).					
<input checked="" type="checkbox"/>		C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of: Mutual Agreement					
<input type="checkbox"/>		D. Other (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return _____ copies to the Issuing Office.							
14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
SEE SECOND PAGE FOR DESCRIPTION							
Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. Name And Title Of Signer (Type or print)				16A. Name And Title Of Contracting Officer (Type or print) MICHAEL T. FINNELL FINNELLM@TACOM.ARMY.MIL (586)574-8361			
15B. Contractor/Offeror _____ (Signature of person authorized to sign)		15C. Date Signed		16B. United States Of America By _____ /SIGNED/ (Signature of Contracting Officer)		16C. Date Signed 2003MAR28	
NSN 7540-01-152-8070 PREVIOUS EDITIONS UNUSABLE				30-105-02		STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243	

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SECTION A - SUPPLEMENTAL INFORMATION

1. The purpose of modification P00004 is to incorporate several changes into the contract. These changes are the result of Government input including User Juries.

- a. Impact of stop work order from GAO award protest - \$88,480
- b. Shock and vibration analysis - \$16,753
- c. Incorporation of a low voltage warning - \$4,496
- d. Inclusion of Optically Improved (OI) SADA - \$22,757
- e. Additional buttons on the hand grip unit - \$15,101
- f. LAV-25 vehicle power study - \$22,250
- g. Extension of prototype delivery - \$8,657
- h. Changes in the commander's station - \$90,414
- i. Additional installation efforts based on the configuration changes - \$19,964
- j. Performance of Preventive Maintenance Checks and Services (PMCS) on the GFE vehicle - \$97,928

2. The contract is changed by page substitution as follows:

- a. Section B, Supplies/Services and Prices/Costs, CLIN 0001AA is revised to extend the delivery date for the prototype ITSS.
- b. Section B, Supplies/Services and Prices/Costs, CLIN 0005AA is added to incorporate changes a through i from the list in paragraph 1, above.
- c. Section B, Supplies/Services and Prices/Costs, CLIN 0006AA is added for PMCS, item j from the list in paragraph 1, above.
- d. Section C, Description/Specifications/Work Statement, paragraph C.4.5.2, Vehicle Integration, is revised to address the changes required for installation based upon the configuration changes and the removal of the M36 periscope.
- e. Section C, Description/Specifications/Work Statement, paragraph C.31 is added to provide the PMCS requirements.
- f. Section C, Description/Specifications/Work Statement, paragraph C.32 is added to provide the LAV-25 vehicle power study requirement.
- g. Section G, Contract Administration Data, is revised to add the appropriation data for the incorporation of the changes listed paragraph 1, a through j, above.
- h. Attachment 001, Purchase Description, Improved Thermal Sight System (ITSS) for Light Armored Vehicle, LAV-25 is revised to change paragraph 3.1.3.2, Commander's Station, to reflect changes in the configuration including the removal of the M36 periscope.
- i. Attachment 001, Purchase Description, Improved Thermal Sight System (ITSS) for Light Armored Vehicle, LAV-25 is revised to change paragraph 3.2.5.2, Shock and Vibration.
- j. Attachment 001, Purchase Description, Improved Thermal Sight System (ITSS) for Light Armored Vehicle, LAV-25 is revised to add paragraph 3.3.1.13, Low Voltage Warning.
- k. Attachment 001, Purchase Description, Improved Thermal Sight System (ITSS) for Light Armored Vehicle, LAV-25 is revised to add paragraph 3.3.2.2.12, Optical Improvements (OI).
- l. Attachment 001, Purchase Description, Improved Thermal Sight System (ITSS) for Light Armored Vehicle, LAV-25 is revised to to change paragraph 3.3.2.3.2, Laser Operation, to reflect the changes in the hand grip unit.

3. Performance under this contract was stopped on June 18, 2002, pursuant to the Stop-Work provision of the contract. The Stop-Work order was lifted and performance was resumed on August 08, 2002. The contractor requested an adjustment for the delivery of the prototype ITSS until August 31, 2003 (change a. from paragraph 1, above). This adjustment in the delivery schedule represents the full and final adjustment resulting from the Stop-Work order and its subsequent cancellation.

4. As a result of this modification, the total amount of the contract is increased by \$386,800.00 from \$8,179,374.00 to \$8,566,174.00.

5. All other terms and conditions remain the same and in full force and effect

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001AA	<p>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</p> <p><u>PRODUCTION QUANTITY</u></p> <p>CLIN CONTRACT TYPE: Cost-Plus-Incentive-Fee NOUN: ITSS PHASE I PROTOTYPES PRON: T122T5234K PRON AMD: 02 ACRN: AA CUSTOMER ORDER NO: M9545002MPR2AJ3</p> <p>(End of narrative B001)</p> <p>The Contractor shall provide prototype ITSS which meet the requirements of Section C.1 - C.16 and the Purchase Description.</p> <p>(End of narrative C001)</p> <p><u>Packaging and Marking</u></p> <p><u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u> DOC SUPPL REL CD MILSTRIP ADDR SIG CD MARK FOR TP CD 001 W56HZV2114H023 Y00000 M 2 DEL REL CD QUANTITY DEL DATE 001 4 29-AUG-2003</p> <p>FOB POINT: Origin</p> <p>SHIP TO: <u>PARCEL POST ADDRESS</u> (Y00000) SHIPPING INSTRUCTIONS FOR CONSIGNEE (SHIP-TO) WILL BE FURNISHED PRIOR TO THE SCHEDULED DELIVERY DATE FOR ITEMS REQUIRED UNDER THIS REQUISITION.</p>	4	EA	<p>\$ 1,625,918.000</p> <p>TARGET COST \$5,983,140.00 TARGET FEE \$ 478,653.00 MINIMUM FEE \$ 119,664.00 MAXIMUM FEE \$ 897,471.00 COM \$ 41,879.00 TOTAL COST \$6,503,672.00</p>	<p>\$ 6,503,672.00</p>

Name of Offeror or Contractor: RAYTHEON COMPANY

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005	SECURITY CLASS: Unclassified				
0005AA	<div>SERVICES LINE ITEM</div> <div>CLIN CONTRACT TYPE: Cost-Plus-Fixed-Fee NOUN: ITSS CONFIGURATION CHANGES PRON: T132T5254K PRON AMD: 02 ACRN: AC CUSTOMER ORDER NO: M9545003MPR3AG8</div> <div>Est. Cost: \$ 265,674.00 Fixed Fee: \$ 21,255.00 COM: \$ 1,943.00 TOTAL: \$ 288,872.00</div> <div>(End of narrative B001)</div> <div>The contractor shall complete the following additional efforts as part of the prototypes in accordance with C.4.5.2, C.32 and the Purchase Description: Impact of stop work order from GAO award protest Shock and vibration analysis Incorporation of a low voltage warning Inclusion of Optically Improved (OI) SADA Additional buttons on the hand grip unit LAV-25 vehicle power study Extension of prototype delivery Changes in the commander's station Additional installation efforts</div> <div>(End of narrative C001)</div> <div>Inspection and Acceptance INSPECTION: Origin ACCEPTANCE: Origin</div> <div>Deliveries or Performance DLVR SCH PERFORM COMPL REL CD QUANTITY DATE 001 0 29-AUG-2003 \$ 288,872.00</div>	LO			

Name of Offeror or Contractor: RAYTHEON COMPANY

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006	SECURITY CLASS: Unclassified				
0006AA	<div>SERVICES LINE ITEM</div> <div>CLIN CONTRACT TYPE: Cost-Plus-Fixed-Fee NOUN: LAV-25 PMCS PRON: T132T5234K PRON AMD: 02 ACRN: AC CUSTOMER ORDER NO: M9545003MPR3AG8</div> <div>Est. Cost: \$ 89,783.00 Fixed Fee: \$ 7,182.00 COM: \$ 963.00 TOTAL: \$ 97,928.00</div> <div>(End of narrative B001)</div> <div>The contractor shall perform vehicle maintenance in accordance with C.31.</div> <div>(End of narrative C001)</div> <div>Inspection and Acceptance INSPECTION: Origin ACCEPTANCE: Origin</div> <div>Deliveries or Performance DLVR SCH PERFORM COMPL REL CD QUANTITY DATE 001 0 31-MAR-2005</div> <div>\$ 97,928.00</div>	LO		\$ 97,928.00	

Name of Offeror or Contractor: RAYTHEON COMPANY

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT

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SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

SECTION C

DESCRIPTION/SPECIFICATIONS

C.1 PROGRAM DESCRIPTION.

C.1.1 IMPROVED THERMAL SIGHT SYSTEM (ITSS). The LAV-25 Improved Thermal Sight System (ITSS) upgrades the performance of the existing LAV-25 day/night sight, the DIM36TH. The ITSS will be packaged in a compact configuration to perform its functions within the existing LAV-25 turret. At a minimum, components of the ITSS shall provide the gunner with thermal imaging and day-sight optics while providing the commander with thermal imaging. The ITSS shall also provide the gunner with an eyesafe laser rangefinder (LRF). The ITSS shall have the following additional operational capabilities:

- a. Ballistic solutions from an integrated Fire Control Computer (FCC).
- b. Target Coordinate Computation Capability (TCCC).
- c. Target Motion Indicator (TMI).

It is desired that a Target laser designation capability from a Laser Designator Module (LDM) be provided for the ITSS.

The Contractor shall provide the necessary supplies and services required to deliver ITSS in accordance with the Purchase Description (Attachment 01), and the other provisions of this contract.

C.1.2 PROGRAM GOAL. The program goal is to provide the LAV-25 with improved sighting capabilities under all environmental conditions in which the LAV-25 operates. Additional capabilities within the program will also provide improved first hit capabilities as well as improved target location designation.

C.1.3 PROGRAM OVERVIEW. This contract consists of two phases: Phase I for Engineering and Manufacturing Development (EMD) and Phase II for Production. Under Phase I, the Contractor shall design, fabricate, and deliver four (4) Improved Thermal Sight Systems that meet the requirements of the Purchase Description (PD). Additionally, two (2) single test stands shall be provided for the laboratory testing. The test stands shall be rigidly constructed and have base plate mounting points to allow for table mounting. The ITSS will be used in the Government's Development and Operational Testing (DT and OT). Initially, two (2) will be used for laboratory testing. Concurrent with the laboratory test, the remaining two (2) ITSS will be installed on LAV-25s by the Contractor at the Government test site. At conclusion of laboratory test, one (1) ITSS will be installed by the Contractor on a third LAV-25 at the same Government test site. The three (3) will then be used for system level Developmental Test and Operational Test. The remaining ITSS will be returned to the Contractor to support Integrated Logistics Support (ILS) efforts at the Contractor's facility. Phase II includes options for production, installation, and support of ITSS that may be unilaterally exercised by the Government. Both phases include requirements for data and contractor support as identified in this contract. The Contractor shall agree to full supportability of all parts and components for a minimum of five (5) years after installation of the last ITSS.

C.1.4 TOTAL SYSTEM RESPONSIBILITY. The Contractor shall have system and integration responsibility as defined herein. The Contractor shall assume total system responsibility for the LAV ITSS program. Total system responsibility is defined as the Contractor agreeing to accept responsibility for incorporating an ITSS that meets the requirements of the PD (Attachment 01), and that does not degrade from the current performance of the LAV-25 as set forth in the Family of Light Armored Vehicle Demonstrated Performance Specification (Annex 1 to Attachment 01). Total system responsibility includes items that are subcontracted and/or Contractor furnished and specified by the Government by manufacturer's name, item description, or part number. Contractor responsibility for Government Furnished Equipment/Government Furnished Material (GFE/GFM) items is limited to any defects or performance degradation resulting from contractor integration of the item. The Contractor shall be responsible for Correction of Deficiencies (COD) as set forth in Section E; for ensuring on-time delivery of all hardware and data deliverables under this contract; and for managing the contract effort to achieve Cost As An Independent Variable (CAIV) goals (ref. C.4.4).

C.1.5 PROGRAM WORK BREAKDOWN STRUCTURE (WBS). The Government developed Program WBS is provided as Attachment 02. This shall be used as the basis for the Contract WBS and the Contractor is responsible for ensuring that the Contract WBS is traceable back to the Program WBS.

C.1.6 GOVERNMENT FURNISHED EQUIPMENT/MATERIAL/INFORMATION (GFE/GFM/GFI). A complete list of equipment and materials that will be made available for the Contractor is contained in Attachment 08.

APPLICABLE TO PHASE I and PHASE II

C.2 MEETINGS AND REVIEWS. The Contractor shall support the meetings, conferences, and reviews required in this scope of work. When it is feasible, the Contractor is encouraged to conduct as many of the meetings in a video teleconferencing format as possible. The Contractor shall be responsible for preparing and submitting all Meeting Agendas in accordance with CDRL A001 and all Meeting Minutes in accordance with CDRL A002 unless otherwise specified for the individual meeting. Contractor attendance at Government held meetings will be limited to the minimum number of subject matter experts with the authority to make programmatic decisions.

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C.3 PARTNERING. In an effort to effectively accomplish the objectives of this contract, the Government, Contractor, and major Subcontractors shall engage in the Partnering Process for the ITSS Program. Participation in the Partnering process is based upon mutual commitment between the Government and the Contractor(s) to work cooperatively as a team to identify and resolve problems and facilitate contract performance. The Government will provide an independent partnering facilitator to conduct the partnering meetings. The intent of the partnering process is a commitment for the parties to agree to work together as a team to expeditiously solve problems as they occur, to communicate effectively, and to avoid surprises.

C.3.1 The primary objective of the Partnering process is to provide the Marines with the highest quality supplies/services on time and at a reasonable price. Partnering requires the parties to look beyond the strict bounds of the contract in order to formulate actions that promote common goals and objectives between the Government and the Contractor. It is a relationship that is based upon open and continuous communication, mutual trust and respect, and the replacement of the "us vs. them" mentality of the past with a "win-win" philosophy for the future. Partnering also promotes synergy, creative thinking, pride in performance, and the creation of a shared vision for success. The ITSS Partnering process will be tailored from the AMC Model Partnering Process, as well as the principles and procedures set forth in the AMC Partnering Guide (see document at web site http://www.amc.army.mil/amc/command_counsel/partnering.html).

C.3.2 The establishment of this Partnering Process does not affect the legal responsibilities or relationship of the parties, and cannot be used to alter, supplement, or deviate from the terms of the contract. Any changes to the contract must be executed in writing by the Contracting Officer.

C.4 PROGRAM MANAGEMENT.

C.4.1 CONTRACT WORK BREAKDOWN STRUCTURE. The Contractor shall present the Contract Work Breakdown Structure (CWBS) and CWBS Dictionary to be used as the basis for Earned Value-based Performance Management System (EVPMS) tracking/reporting. This CWBS shall be expanded by the Contractor from the Government furnished WBS, as shown in Attachment 02, to reflect the manner in which the work will be accomplished on the contract, and to facilitate management, data collection, and reporting.

C.4.2 PROGRAM PLANNING SCHEDULE. The Contractor shall provide a detailed program planning schedule, outlining its plans for meeting the required delivery schedules for the hardware and data under the development phase. The schedule(s) shall identify all work events that are required to achieve the required delivery dates. The schedule(s) shall clearly identify the critical path, see Attachment 03 (Critical Milestone Events). The data shall be delivered in accordance with CDRL A003.

C.4.3 EARNED VALUE BASED PERFORMANCE MANAGEMENT SYSTEM. EVPMS is a tool that allows both Government and Contractor program managers to have visibility into technical, cost, and schedule progress on their contracts. EVPMS shall be used on the LAV ITSS Program to ensure that program cost, schedule, and performance objectives are integrated and tracked to ensure their achievement. EVPMS shall be used as a key tool in managing program risk; however, contract EVPMS requirements shall be tailored down to the minimum necessary based on the ITSS Risk Analysis/Risk Management Plan (ref. C.4.6). Responsibilities of the parties are set forth in paragraphs C.4.3.1, C.4.3.2, and C.4.3.3.

C.4.3.1 CONTRACTOR. The Contractor has the primary responsibility for managing the ITSS program and their EVPMS process/system, as a tool to ensure that Contractor and Government program managers have visibility into progress toward achieving program cost, schedule, and performance objectives. The Contractor shall summarize and report on EVPMS metrics in monthly Cost Performance Reports-no criteria (CPR-NC) (CDRL A004) and at Program Status Reviews. The Contractor shall monitor the effectiveness of their EVPMS system, and that of their major subcontractors. The Contractor and the Government shall jointly determine the extent of subcontractor involvement in the EVPMS program, but the Contractor shall maintain responsibility for monitoring/ consolidating the subcontractor's EVPMS input into its EVPMS system/reports, and shall be responsible for its accuracy. The Contractor's EVMS shall comply with DOD 500.2-R.

C.4.3.2 PM, LIGHT ARMORED VEHICLES. PM-LAV will review the Contractor's CPR-NC submissions, and, in partnership with the Contractor, monitor progress toward achievement of program cost, schedule, and performance goals. PM-LAV will chair the Integrated Baseline Review (IBR), and any other formal EVPMS reviews deemed necessary by PM-LAV during the course of the ITSS program.

C.4.3.3 PROCURING CONTRACTING OFFICER (PCO). The PCO will effect any contract modifications required to incorporate changes to contract EVPMS requirements, or may designate this responsibility to the ACO. The PCO, ACO, and PM-LAV shall jointly review the Contractor's EVPMS plan to verify its adequacy.

C.4.3.4 PERFORMANCE MEASUREMENT BASELINE. The Contractor shall identify major WBS elements and critical elements to track based on Government and Contractor analysis. These elements will be baselined at the Start of Work Meeting and tracked using the EVM process.

C.4.3.5 COST PERFORMANCE REPORT (CPR). The Contractor shall provide a Standard Cost Performance Report in Contractor format (Format 1) that shall include the following data elements at task level:

- a. Current and Cumulative Budgeted Cost of Work Scheduled (BCWS)
- b. Current and Cumulative Budgeted Cost of Work Performed (BCWP)
- c. Current and Cumulative Actual Cost of Work Performed (ACWP)
- d. Schedule Variance (SV)
- e. Cost Variance (CV)

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- f. Latest Revised Estimate at Completion (LRE)
- g. Variance at Completion (VAC)
- h. Budget at Completion (BAC)

The Contractor shall submit narrative explanations (Format 5) for each element in Format 1 which has schedule Performance Index (SPI) and Cost Performance Index (CPI) values fall to 0.95 or below.

The Cost Performance Report - No Criteria (CPR-NC) shall be submitted electronically in accordance with CDRL A004 for effort performed under cost type Contract Line Item Numbers (CLINs). In addition, the Contractor shall provide CPR data in ANSI-ASC X12 format, compatible with the Government's EVPMS tracking software. On-line access by the Government of the Contractor's CPR/EVM data is preferred over electronic submission, so that the Government can monitor the data and print out its own reports. The Contractor's CPR/data shall incorporate subcontractor EVPMS data.

C.4.3.6 TAILORING OF THE CPR-NC. CPR-NC requirements shall be tailored to the maximum extent possible to accommodate the Contractor's EVPMS system, and to reflect the minimum essential data needed by the Government to manage the program. The Government and Contractor shall agree on the extent of tailoring of the CPR-NC at the IBR.

C.4.4 COST AS AN INDEPENDENT VARIABLE (CAIV). The CAIV goals for the ITSS program are as follows:

- Development Cost Objective: \$7,361,437 (10% Reduction)
- Design to Unit Cost Production Cost (DTUPC) Objective: \$195,102 (4.5% Reduction)
- Test Cost Reduction Objective: TBD**
- O&S Cost Savings Objective: TBD per year**

* The Contractor shall identify proposed Development Cost and DTUPC objectives in its proposal. These amounts shall be no greater than the proposed total Phase I CLIN amounts for the Development Cost Objective, and no greater than the unit price for the proposed, total not-to-exceed production option prices for the DTUPC objectives (e.g. the total for ITSS hardware option plus installation option CLINs on a per unit basis). The Contractor's CAIV plan (ref L.5.4.5) should include rationale and supporting documentation for proposed objectives.

**The Government and Contractor shall work together to define CAIV goals for disposal cost for the ITSS. The Contractor shall work with the government through the Test Integrated Process Team (TIPT) meetings to identify tests that could be conducted by the Contractor in lieu of government testing. The objective will be to reduce program test costs but not test requirements or objectives. When government test cost estimates are established, the Contractor will be awarded incentives IAW B.1.2.1 for any test cost reductions incurred as a result of this approach. The Contractor's CAIV Plan submitted with its proposal is incorporated herein by reference and will become the contract's CAIV requirements. The Contractor shall manage the ITSS program to ensure that the program CAIV goals are achieved.

C.4.4.1 SPECIAL PROVISION REGARDING ITSS DESIGN DECISIONS AND THE COST-AS-AN-INDEPENDENT-VARIABLE (CAIV) PROGRAM

C.4.4.1.1 Critical decisions made by the Contractor in designing the LAV ITSS will be based upon the results of the cost/performance trade-off analyses, as required by the contract CAIV requirements. It is further recognized that situations may occur in which such trade-off analyses clearly indicate the desirability of design decisions that could significantly increase the Contractor's costs of performance during the Prototype Development Phase (Phase I) and/or the Production Phase (Phase II), but result in substantially greater long-term benefits to the Government.

C.4.4.1.2 In recognition of the above, the parties agree that whenever the Contractor shall consider making a design decision which the Contractor reasonably expects to significantly increase its costs of certain Phase I or Phase II effort over the estimated costs included by the Contractor for such effort (e.g. the target cost for Phase I and/or the production price(s) for Phase II), and the Government has concurred with the proposed design decision, the Contractor shall submit to the Contracting Officer:

- a. The Contractor's estimated Phase I and/or Phase II costs to implement the contemplated design decision, with supporting documentation;
- b. The Contractor's estimate of Phase I and/or Phase II costs for other acceptable design alternatives;
- c. The detailed basis for the Contractor's estimate for the effort contained in its initial ITSS Cost Proposal;
- d. The Contractor's assessment of the anticipated long-term benefits to the LAV ITSS Program associated with the design decision (including projected reductions in total ownership cost, and in particular O&S costs); and
- e. Any additional supporting documentation requested by the Contracting Officer.

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C.4.4.1.3 Upon consideration of the above information, if the Government determines that the overall, long-term benefits substantially outweigh the additional costs to be incurred by the Contractor, the contract will be equitably adjusted to reflect the Contractor's anticipated increase in Phase I and/or Phase II costs resulting from said design decision.

C.4.4.1.4 No request for equitable adjustment hereunder will be considered unless the Contractor's proposed design decision was received and concurred in by the PCO in writing prior to effecting the design decision. Government approval of the proposed adjustment is contingent upon the Contractor verifying that the basis for the proposed adjustment is due to a CAIV-based design decision NOT initially addressed in the contract proposal, and is not due to underestimated cost/price (e.g. overrun). It is further understood and agreed that, with regard to any design decision for which an equitable adjustment is made pursuant to this clause, the Contractor shall not be entitled to submit any subsequent change proposals pursuant to the clause of this contract entitled "VALUE ENGINEERING (MAR 1989), FAR 52.248-1.

C.4.5 MANUFACTURING/INSTALLATION PLAN. The manufacturing/ installation plan submitted as part of the Contractor's proposal is incorporated herein by reference and shall be updated within 30 days after the Critical Design Review (CDR). The update shall reflect any changes made in the plan since the coordination effort meeting (C.7.10). The following factors, at a minimum, shall be addressed in the updated plan: production process planning, identification of the production process sequence and critical control points, the interrelated lead-times between the control points, manpower utilization, tooling and facilities plans, current and expected workload during the ITSS performance period, subcontracting plan and the material requirements planning process to be used. Further updates will be required if any of the critical process characteristics are changed as a result of the planning process. Examples of such changes are: changing a critical process method, changing the subcontracted effort, changing the share of work performed at subcontractors or the system integrator.

C.4.5.1 VEHICLE INSTALLATION. During Phase I, the Contractor shall provide, as part of the updated Manufacturing Plan (CDRL A009), an installation plan showing how the Contractor will accomplish the installation of the ITSS in the LAV-25. During Phase II, the Contractor shall implement the installation plan.

C.4.5.2 VEHICLE INTEGRATION. The Contractor shall be responsible for the installation of the ITSS into LAV-25s that have completed the current Service Life Extension Program (SLEP), Contract DAAE07-00-C-M010. The ITSS shall be designed to allow installation in any LAV-25 that has undergone the SLEP and had the M36 periscope removed. The Contractor should design with the understanding that there could be a variation in space claim or alignment due to ammo feed chute variation and/or turret armor warpage. The amount of variation should be minor, but installation should allow for minor adjustment.

C.4.6 RISK MANAGEMENT. The Contractor shall implement a Risk Management Program. The initial set of Contractor-defined risks shall be updated as the Government or Contractor identifies new risks. The Contractor shall rank risks with respect to impact on performance, cost, and schedule and shall identify and develop mitigation plans for risk reduction/resolution. The Contractor shall describe its proposed risk management program in its technical proposal in accordance with CDRL A005.

C.4.6.1 RISK REPORTING. The Contractor shall maintain a risk management program to assess risks associated with achievement of technical, cost, and schedule requirements. Specific risk management functions shall, at a minimum:

- Identify known and potential risks
- Assess risks, including a relative ranking by program impact and the establishment of critical thresholds
- Define methods or alternatives to mitigate or minimize these risks, including the identification of criteria upon which programmatic decisions can be based
- Track and report risk mitigation progress

The Contractor's risk management program shall be presented to the Government initially at the Partnering Meeting (C.3) and then in monthly updates in accordance CDRL A005 and at in-process and other appropriate reviews.

C.4.7 HAZARD TRACKING. The Contractor shall develop a method or procedure to document and track hazards from identification until the hazard is eliminated or the associated risk is reduced to a level acceptable to the Government. A central file or document called a "Hazard Log" shall be maintained. The Hazard Log shall contain as a minimum:

- A description of each hazard, to include cause, possible effect, and hazard category.
- Status of each hazard.
- Traceability of the resolution action on each hazard, from the time the hazard was identified to the time the risk associated with the hazard was reduced to a level acceptable to the Government.
- All hazards identified through testing and other analyses.

C.4.7.1 HAZARD LOG. The definitions of Severity Categories and Probability Levels identified in Tables 1 and 2 below shall apply when determining whether a hazard must be identified on the Hazard Log.

TABLE 1 - HAZARD SEVERITY CATEGORY

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DESCRIPTION	CATEGORY	DEFINITION
Catastrophic	I	Death, system loss or severe environmental damage
Critical	II	Severe injury, severe occupational illness or major system or environmental damage
Marginal	III	Minor injury, minor occupational illness or minor system or environmental damage
Negligible	IV	Less than minor injury, less than minor occupational illness or less than minor

TABLE 2 - HAZARD PROBABILITY LEVELS

DESCRIPTION	LEVEL	ITSS COMPONENT LEVEL	VEHICLE FLEET LEVEL
Frequent	A	Hazard is likely to occur	Hazard will be experienced continuously
Probable	B	Hazard will occur several times during the life of the ITSS	Hazard will occur frequently
Occasional	C	Hazard is likely to occur some time during the life of the ITSS	Hazard will occur several times
Remote	D	Hazard is unlikely, but could possibly occur during the life of the ITSS	Hazard is unlikely but it can reasonably be expected to occur
Improbable	E	Hazard is very unlikely and it can be assumed not to occur	Hazard is unlikely but it can possibly occur

C.4.7.2 All hazards identified with the following combination of Severity Categories and Probability Levels shall be included on the Hazard Log:

Category I	Levels A through E
Category II	Levels A through D
Category III	Levels A through C
Category IV	Level A

C.4.7.3 The Hazard Log shall be presented at each monthly In-Process Design Review (ref. C.7.7). During the first review, the Contractor shall present the complete Hazard Log. At subsequent reviews, the Contractor need only report on changes, updates, or closeout actions since the previous review.

C.4.7.4 DISPOSITION AND CLOSEOUT. All hazards must receive final disposition by the Government. The Government and the Contractor shall mutually agree as to whether a hazard requires a redesign; however, any redesign required due to a hazard shall be performed at no cost to the Government, and the adequacy of the design change shall remain the responsibility of the Contractor. All hazards closed out in the log shall contain the signature of the Government official who authorized the closeout, his or her organization, and the date the closeout was authorized. Government signature authority to closeout a hazard shall be based on Table 3 below.

TABLE 3 - HAZARD APPROVAL LEVELS

HAZARD ASSESSMENT	CLOSEOUT AUTHORITY	RISK LEVEL	CORRECTIVE ACTIONS
I A,B,C			
II A,B	PM-LAV	Unacceptable	Mandatory
III A			
I D			
II C,D	Division Chief,		Mandatory, unless
III B,C	Marine Prog.	Undesirable	waived by Customer

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I	E	Acceptable,	Possible, based on
IV	A	Team Leader	Customer review
		with Customer	
		Review	

All other categories	Not Required	Acceptable	Not Required
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C.4.7.5 UPDATES. The hazard log shall be updated upon identification of each new hazard. The Government reserves the right to require the addition of items to or modifications to the Hazard Log.

C.5 CONFIGURATION MANAGEMENT (CM)

C.5.1 Definitions of Configuration Management Terms are provided in Attachment 04, Definitions for Configuration. Definitions of the Multi-User Engineering Change Proposal Automated Review System (MEARS) are contained in paragraphs 5.3.6 and 5.4 in Attachment 05, Government Concept of Operations Integrated Data Environment.

C.5.2 CM PROGRAM REQUIREMENTS. The Contractor shall establish a CM program defining the management system for configuration identification, configuration control, accountability for configuration changes and configuration audits. The Contractor is responsible for CM on ITSS, to include work performed by subcontractor(s). The Contractor shall submit recommended changes to vehicle components to the Government for approval. The Government will retain responsibility for CM over the entire LAV-25 fleet.

C.6 QUALITY ASSURANCE. The Contractor shall establish, implement, document and maintain a quality system that ensures conformance to contractual requirements. The Contractor shall implement the requirements of ANSI/ASQC Q9001, ISO 9001 or an equivalent quality system model; no third party certification is required.

C.6.1 QUALITY SYSTEM AUDITS/INSPECTIONS. The Contractor is required to support all audits and inspections performed by the Government on Contractor developed hardware, software, processes and procedures per section E, paragraph E.3, E.4 and E.5 for Phase I and E.13.4, E.13.5 and E.13.6 for Phase II. The Contractor is required to maintain all quality records and make them available to the Government as required per section E, paragraph E.9 of this contract.

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C.7.1 START OF WORK MEETING. The Contractor shall conduct a Start of Work meeting at his facility no later than 30 days after contract award for approximately 15 government personnel. The Contractor shall present the Program Management Plan as well as the contract schedule critical path network, the Contract Work Breakdown Structure (WBS), the Risk Management Plan and the Quality Assurance Program Plan.

C.7.2 SYSTEM FUNCTIONAL REVIEW (SFR) shall also be included in the Start of Work meeting. The SFR presentation shall cover, as a minimum, the following elements:

- The system functional and performance requirements are traceable to the system design approach and the Technical WBS.
- Critical technologies, personnel, and processes have been identified and assessed.
- The System Functional Baseline is established. Show the System Specification path toward establishing the Item Specification.
- The technical and programmatic risks are identified and the mitigation plans are acceptable.
- Identify the Technical Performance Measures (TPM) and the tracking plan.
- Establish government data rights and access to software documents.
- Present a software development plan, identifying the development of new software and the integration of existing software.
- Identify existing software documentation, and new software documentation to be developed.
- Installation plan concept.
- Contractor Integrated Test Plan.

C.7.3 PARTNERING MEETING. In conjunction with the Start of Work meeting, the contractor and government will conduct a partnering meeting (C.3, Inclusive).

C.7.3.1 EXECUTIVE WORKSHOP. Within 30 days after contract award, and immediately prior to the start of work meeting, Government and Contractor senior executives/managers shall conduct an Executive Partnering Workshop. At a maximum this shall be a one-day meeting. The purpose of this workshop is to establish lines of communication between upper management in both parties, and ensure their commitment to the Partnering Process. The product of this meeting shall be an overarching Partnering agreement/charter for the ITSS program, including designation of senior-level and program-level "Champions". The "Champions" will be responsible for overseeing the project, enforcing the team approach, overcoming resisting forces, participating in the resolution of issues escalated to their level, celebrating successes, and maintaining a positive image for the project. The outputs of this session shall be presented to the entire team at the start of work meeting

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C.7.3.2 TEAM WORKSHOP. In conjunction with the start of work meeting, the Government and Contractor teams shall participate in a Partnering Workshop that shall last no longer than 1 day. The purpose of the meeting is to conduct team building between the Government/Contractor team members, and establish lines of communication. Products of the meeting may include:

- The ITSS Partnering Charter (mission statement, goals, and objectives).
- The Joint ITSS Risk Management Plan, identifying specific program risk areas, with a risk mitigation plan and Government/Contractor action officers for each.
- Conflict escalation procedure (identifies methods of elevating disagreements for resolution within the Government and Contractor organizations).
- Alternative Dispute Resolution (ADR) approaches.
- Metrics for accomplishments of objectives.
- Reinforcement Techniques.
- Clear identification of roles and responsibilities for the team members.

C.7.3.3 FOLLOW-UP ACTIONS. The parties shall report status of risk items and partnering issues at Program Status Reviews (PSRs, ref. C.7.9). Joint reporting by Government and Contractor action officers is expected. In addition, the Government/Contractor shall meet periodically (approximately every 3 months, unless more frequent meetings are required and mutually agreed upon) to review and update the Partnering Charter, Risk Management Plan, and other Partnering documents.

C.7.4 LOGISTICS START OF WORK MEETING. The Contractor shall conduct an ILS SOW meeting NLT 30 days after contract award. The ILS SOW meeting shall last no longer than two (2) days. The Contractor shall at a minimum, brief schedules and key ILS milestones for the program. Additional topics/processes to be discussed include, but are not limited to:

- a. Maintenance planning
- b. Contractor support requirements for DT and OT and production tests
- c. Support Equipment (SE) and Test Measurement and Diagnostic Equipment (TMDE) development and identification
- d. TM publication development process
- e. Logistics Reviews:
 1. Dates and locations
 2. Availability of ITSS Items, common tools, special tools, TMDE, support equipment and bulk items/expandable items
- f. Technical data support (provisioning data, technical publications, engineering data for provisioning (EDFP), etc)
- g. Computer support
- h. USMC Maintenance facilities
- i. Design influence and integration efforts with System Engineering
- j. Packaging, Handling, Storage, and Transportation (PHS&T)
- k. Configuration Management
- l. Recommended Repair Parts List (RRPL) generation
- m. Training plan of action and milestones to meet courseware update/development and training requirements. Training dates and locations for:
 1. DT and OT
 2. Production Verification Test
 3. Handoff Training
 4. Operator Training
 5. Instructor & Key Personnel Training
 6. New Equipment Training (NET)
 7. Familiarization Training
- n. ILS Program Risk Management. The Contractor shall brief any program risks that may affect the ILS effort. Risk items shall be analyzed according to program, cost, schedule, and performance. Risk items to be considered are any tasks that are a part of the ILS effort (i.e., TMs, provisioning, maintenance, CM).
- o. Quality control process for ILS development
- p. Provisioning to include procedures for developing data and identifying long lead-time items.

C.7.5 CAIV INTEGRATED PRODUCT TEAM (CIPT) Meeting. The initial meeting of the CIPT will be held in conjunction with the ITSS start of work meeting.

C.7.6 SOFTWARE TECHNICAL INTERCHANGE MEETING. In conjunction with the start of work meeting, a software partnering team meeting will convene to establish the software development plan and schedule (C.10, inclusive). The intent of these meetings is to ensure that any software development under this contract is traceable and supportable. Additionally, this meeting should be the forum for establishing groundrules for the Government-Contractor software team regarding how they will interact. The document approval process should also be established at this time. The frequency and duration of these meetings will be mutually agreed to at the program Start of Work/Partnering meetings. It is anticipated that the meetings be held on a monthly basis for the EMD phase but may be adjusted at the partnering meetings. These meetings may take the form of Government and/or Government representatives participating in regularly scheduled internal software design and management activities.

C.7.7 IN-PROCESS DESIGN REVIEWS (IPDR). The Contractor shall conduct IPDRs at its facility or at a mutually agreeable subcontractor's facility on a bi-monthly (every other month) basis starting 20 days after the Start of Work meeting. The purpose of

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these informal, working level meetings will be to assess the progress being made toward meeting the requirements of the Purchase Description and this SOW to include ILS development. Topics which should be addressed at the IPDRs are the same as those covered in paragraph C.9.1. Duration of these meetings should not exceed 2 working days. These meetings could be conducted via video-telecon if mutually agreeable to the Government and Contractor.

C.7.8 INTEGRATED BASELINE REVIEW. An Integrated Baseline Review (IBR) shall be conducted to seek mutual understanding of and agreement to contractor planning for ITSS EVPMS. Fourteen days prior to the IBR, the Contractor shall provide its System Description, WBS Dictionary, Cost Account Matrix, Responsibility Assignment Matrix, and sample master, intermediate and detail schedules, as well as, sample Work Authorization Documents and their flows in accordance with CDRL A004. The IBR shall be held at the Contractor's facility by NLT 90 DAC. The IBR shall be chaired by PM-LAV, and shall address the following issues, as a minimum:

- Verify technical content of the Performance Measurement Baseline (PMB) and accuracy of related resource (budgets) and schedules.
- Ensure that there is a logical sequence of effort planned consistent with the contract schedule.
- Conduct a technical assessment of the earned value methods that will be used to measure progress to assure that objective and meaningful performance data will be provided.
- Establish a joint understanding of the Contractor's EVMS, to serve as the basis for future reviews of EVM planning, status, and estimates at completion to ensure that baseline integrity is maintained throughout the life of the contract.
- Tailoring of reporting to the minimum level required for effective contract management and oversight.

C.7.9 PROGRAM STATUS REVIEWS (PSR). The Government shall conduct program status reviews at the Contractor's facility. During Phase I, much of the information required at PSRs can be covered during design reviews (C.7.7, C.9.1, and C.9.2). It is expected during Phase I that PSRs will be conducted twice a year.

C.7.10 PRODUCTION COORDINATION MEETINGS. At the start of each phase of the contract, the Government will conduct production coordination meetings with all stakeholders in accordance with C.9.6.

C.8 CAIV REQUIREMENTS-Phase I

C.8.1 CAIV PLAN. The Contractor shall implement the CAIV plan submitted with its proposal, and update the plan as required through the life of the ITSS program in accordance with CDRL A006.

C.8.2 CAIV INTEGRATED PRODUCT TEAM (CIPT). Within 30 days after contract award, the Government and Contractor/major subcontractors shall meet at the Contractor's facility to establish the CIPT. The purpose of the CIPT is to identify and evaluate cost-performance tradeoffs, validate program Life Cycle Cost (LCC) methodology, identify risk areas in achievement of CAIV goals, and identify promising cost reduction initiatives. The CIPT shall develop initial CAIV goals for O&S Cost, and Disposal Cost for the ITSS, and identify methods of tracking achievement of these goals. One product from the initial meeting shall be a list of metrics to determine progress toward achieving the ITSS CAIV goals. These metrics shall be incorporated into the plan and a revised CAIV plan submitted to the Government by 60 DAC in accordance with CDRL A006. The CIPT shall meet periodically (approximately twice a year) to review the CAIV plan and metrics.

C.8.3 The Contractor shall report CAIV status progress against goals and metrics at PSRs and Design Reviews (C.7.7, C.7.9, C.9.1, and C.9.2).

C.9 PROGRAM MANAGEMENT - PHASE I

C.9.1 PRELIMINARY DESIGN REVIEW (PDR). The Contractor shall conduct a Preliminary Design Review. The Contractor will propose the DAC for this event with justification for date proposed. The purpose of the PDR is to confirm the approach for System Detailed Design (as an integrated composite of personnel, product, and process solutions) satisfies the functional baseline; risks are mitigated with closure plans for remaining risks demonstrating required progress; and the total system is ready for detailed design. The PDR will address/confirm that:

- a. The process completely defines the system requirements for detailed design including that:
 1. The design approach is balanced across cost, schedule, performance and risk for the lifecycle.
 2. The system's physical architecture is an integrated design which satisfies the requirements including interoperability and interfaces.
 3. An audit trail from the SFR is established with changes substantiated.
 4. The system's design approach is consistent with test and evaluation results.
 5. Risks are mitigated and remaining risks defined.
 6. The allocated baselines for subsystems are defined.
- b. The requirements allocation, design synthesis, and functional flow are identified and trackable.
- c. Configuration Items and Item Specifications are defined, final and traceable to the system specification.
- d. Sufficient design and internal test has been accomplished to verify the completeness and achievability of the defined requirements.
- e. The Producibility/manufacturing aspects of the system are being addressed during the design phase. The Contractor shall demonstrate that:
 1. Manufacturing engineering considerations are integral to the design process.

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2. The proposed designs will be evaluated in 'make vs. buy'.
3. The program delivery schedules will be met.
4. Manufacturing planning is considered throughout the design phase.
- f. Logistics development - maintenance concept, lifecycle cost analysis, support equipment.
- g. Software issues:
 1. Overall software structure to the Computer Software Component (CSC) level.
 2. Functional flow showing how the System Requirements Specification (SRS) elements are allocated.
 3. Control function descriptions that explain how the executive control of the CSC's will be accomplished.
 4. Plans for testing the software.
- h. Quality Assurance test, inspection, and acceptance criteria.
- i. Reliability, Availability, Maintainability.
- j. Human factors.
- k. System safety.
- l. CAIV Objectives.

C.9.2 CRITICAL DESIGN REVIEW (CDR). The Contractor shall conduct a Critical Design Review. The Contractor shall propose the DAC for this event with justification for date proposed. The purpose of the CDR is to demonstrate the system detailed design (as an integrated composite of people, product, and process solutions) is complete, meets requirements, and that the system is ready for fabrication and coding. The CDR will address/confirm that:

- a. Issues for the system, functional areas, and subsystems are resolved.
- b. The process completely defines system requirements including that:
 1. The system is balanced across cost, schedule, performance and risk for the lifecycle.
 2. The system physical architecture is an integrated detailed design including interoperability and interfaces.
 3. An audit trail is presented which traces and substantiates any changes from the PDR.
 4. The allocated baseline is finalized.
 5. Adequate contractor tests have been completed to verify system requirements have been, or will be, met.
- c. The system design compatibility with external interfaces has been established.
- d. Software issues:

1. Description of the detailed design of the software, including data definitions, control flow, timing, sizing, and storage allocation.

2. Detailed characteristics of all interfaces.

Lifecycle support considerations that include a description of the software tools and facilities used during development that will be required for software maintenance.

e. The producibility/manufacturing aspects of the system that were addressed during the design phase. The Contractor shall demonstrate that:

1. Manufacturing engineering considerations were integral to the design process
2. The proposed designs were subject to "make vs. buy" analyses.
3. The program delivery schedules will be met.
4. Make items have preliminary manufacturing routings, methods and inspection criteria established.
5. Purchased items with long lead times are on order or will be in support of program delivery schedules.
6. Ease of installation was considered during the design process and has been designed into the system.
- f. Quality Assurance.
- g. Reliability, Availability, Maintainability:
- h. Human factors.
- i. System Safety.
- j. CAIV Objectives & Detailed O & S analysis.

C.9.3 ENGINEERING AND MANUFACTURING DEVELOPMENT. During Phase I, the Contractor shall design, develop, test and fabricate prototypes of the ITSS that meet the requirements of this contract. The Contractor shall perform the necessary development tests to ensure the performance of the ITSS. The Contractor shall support both the Government performed Developmental Tests (DT) and Operational Tests (OT) as required. The resulting ITSS shall be producible and supportable.

C.9.4 CONFIGURATION MANAGEMENT (CM).

C.9.4.1 CONFIGURATION IDENTIFICATION/BASELINE. The ITSS and any vehicle modifications necessary to meet the PD, Attachment 01, shall be designated as a Configuration Items (CI). ITSS and vehicle component configurations will be firmed up in accordance with the scheduled Design Review Meetings. Any configuration changes required after prototype delivery shall require Government approval. The data documenting these changes shall be kept to a minimum. The initial configuration baseline shall be that baseline established upon delivery of the prototype ITSS for test and as modified by changes and corrections agreed upon as a result of DT and OT.

C.9.4.2 Prior to delivery of the prototype systems, the Contractor shall document and track all changes using Engineering Change Orders (ECO) and other Contractor tracking procedures. The ECO data shall be made available to the Government, as information-only, upon request. After delivery of prototype systems, all configuration changes require Government approval via the Engineering Change Proposal (ECP) or Request for Deviation (RFD) process (reference CDRs A007 and A008). The Contractor's configuration control program shall

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- a. Ensure effective control of all CIs and their approved configuration documentation.
- b. Provide effective means, as applicable for: (1) Proposing engineering changes to CIs, (2) Requesting Deviations to such items to such items.
- c. Ensure implementation of approved changes.

C.9.5 ENGINEERING DATA.

C.9.5.1 ITSS TDP. The Contractor shall develop, manage, and maintain the TDP for only ITSS modification items starting from contract award for a minimum of 5 years after last production ITSS is installed. The TDP shall consist of technical documentation, including but not limited to: drawings, parts lists, Bills of Materials, and Quality Assurance Provisions. After that time, Government will instruct the Contractor as to what documentation to deliver. Reference CDRLs A023, A024, and A025.

C.9.5.2 ENGINEERING DRAWINGS. The Contractor shall develop a complete product engineering drawings and associated lists package in accordance with MIL-STD-100, ASME Y14.100M and ASME Y14.34.M, except drawing dimensions and tolerances may be per ANSI Y14.5M-1982. These drawings shall include assembly and detail drawings down to the piece part for the items designed and developed at government expense. Control drawings shall be developed for all commercial off the shelf, non-developmental items, and items developed at private expense for which the government has not acquired unlimited rights. These control drawings shall provide the applicable performance specification form, fit, and function information needed for competitive procurement of that item or an interchangeable item. Prepare and deliver in accordance with CDRL A024.

C.9.6 CONTRACTOR COORDINATION EFFORTS. Within 30 days after contract award and following the Start of Work meeting, the Contractor shall meet with PM-LAV, Marine Corps Logistics Bases (MARCORLOGBASE), and/or the field unit representatives to discuss how best to coordinate Phase II installation. The parties shall review the most efficient timing of installation tasks, in order to minimize schedule risk and maximize overall process efficiency. Within 90 days after the meeting, the Contractor shall submit an updated Manufacturing/Installation Plan (C.4.5 and CDRL A009) reflecting agreements reached at the meeting. This document shall help the Government and the Contractor to perform initial forward planning for the Production phase. The Contractor shall continue to monitor this plan through Phase I, and provide any required modifications (based on the ongoing development effort) to the Government.

C.9.7 VEHICLE CONFIGURATION. The Government will provide the Contractor with one (1) LAV-25 for the prototype development effort. This vehicle shall be a complete vehicle that has gone through the Service Life Extension Program (SLEP) contract number DAAE07-00-C-M010.

C.9.8 TRANSPORTATION. The Government shall be responsible for shipping one LAV-25 as GFE to the Contractor's facility within 30 days after contract award.

C.10 SOFTWARE DEVELOPMENT - PHASE I. The Contractor shall develop software computer resources to meet the functional requirements of the purchase description. The contractor is fully responsible for the adequacy of all computer resources. The contractor is encouraged to use non-government standards and industry practices provided they meet the intent of military software specifications and standards (MIL-STD -498 or IEEE/EIA 12207.0/12207.1/12207.2). All software documentation, development, and software development and test activities shall be coordinated with and/or witnessed by the Government or Government designated representatives of the Software Partnering team. The Software Partnering Team will work with the Contractor through Software Technical Interchange Meetings to ensure the software development and documentation development is traceable and supportable. The intent of this teaming arrangement is to eliminate the need for contractual document deliveries and not impede Contractor development cycles. The contractor shall develop the following categories of software documents listed below, in contractor's format:

- Software Development Plan (CDRL A010)
- Software Requirements Specification)
- Interface Requirements Specification
- Software Design Document
- Interface Design Document
- Software Test Plan
- Software Test Description

C.10.1 SOFTWARE TEST REPORT. The contractor shall propose a development sequence and schedule for the above documents, with rationale explaining how the schedule was derived. The government Software Partnering Team shall use this schedule and sequence for developing their on-site planning schedule for Technical Interchange Meetings. Final versions of all documents will be developed within 30 calendar days of the completion of the software FCA/PCA audits.

C.10.2 TRACEABILITY. Traceability shall be identified and maintained from the system level requirements to the applicable test cases which demonstrate compliance with the requirement. Traceability shall be provided to and from the predecessor documents to include the Software Requirements Specification, Interface Requirements Specification, Software Design Document, and Software Test Description.

C.10.3 SOFTWARE TESTING. Testing shall be performed as follows:

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- a. The contractor shall maintain a Software Test Plan covering testing required by this SOW for review, analysis, and concurrence by the Software Partnering Team. This document shall address any demonstration plans for software requirements as well as all informal and formal testing.
 - b. The testing shall be performed as documented in the Software Test Description (STD). The STD shall identify the use of emulators/simulators and laboratory hardware as required.
 - c. The contractor shall conduct a Formal Qualification Test (FQT) in accordance with the Software Test Plan and the Software Test Description NLT 360 DAC. The current version of the STD shall be utilized to describe any test scenario required in support of testing the SRS requirements. The FQT shall be performed against the requirements documented in the SRS.
 - d. Within 30 calendar days of the conclusion of the Formal Qualification Test, the contractor shall finalize a Software Test Report in contractor's format that is agreed upon by the Software Partnering Team. The report shall document the results for the impacted software.
 - e. The contractor shall conduct a Regression Test within 60 calendar days of the conclusion of the Formal Qualification Test, in order to demonstrate all fixes to problems identified in the Software Test Report. A regression test analysis shall be accomplished to determine the appropriate degree of re-testing necessary to assure proper implementation of the change and that no resulting degradation of system performance has been introduced.
- C.10.4 SOFTWARE AUDITS. The contractor shall support a Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) to be conducted by the Government NLT 450 DAC. The FCA will validate that the development of the software has been completed satisfactorily and achieved the functional and allocated configuration identification. The PCA will verify the software "as built" conforms to the technical documentation.
- C.10.5 SOFTWARE QUALITY ASSURANCE (SQA). Software Quality Assurance shall be maintained throughout the systems life cycle. SQA procedures and practices shall be implemented to ensure that the operational integrity of the systems software is maintained. The SQA program shall be part of the management reporting system during all phases of the software development. Additionally, the SQA program shall utilize analyses and assessments, documentation reviews, design reviews, and shall monitor tests and audits to ensure compliance with the requirements.
- C.10.6 SOFTWARE CONFIGURATION MANAGEMENT (CM). Configuration Management shall maintain the Software Release Library containing the software source code and object files. Configuration Management shall also maintain the library of software documentation. Government Software Partnering Team representatives will use this plan to aid in their understanding of the contractor's configuration management techniques and methodology.
- C.10.7 SOFTWARE INDEPENDENT VERIFICATION AND VALIDATION (IV&V). The contractor shall provide support for the Government's Software Partnering Team representatives. The contractor shall provide access to all information necessary to analyze the software and firmware modifications as the development progresses. Access provided to the Software Partnering Team representatives shall include, but is not limited to the following:
- a. Access to the software maintenance library; all software, software reviews, meetings minutes, program listings, documentation (including design notebooks and Software Development Files (SDFs));
 - b. Software Problem Correction Reports (PCRs) and Test Incident Reports (TIRs), configuration status accounting records and reports, and all internal reviews and audits.
 - c. The contractor shall also provide access to all levels of testing, test results, raw test data, reduced test data, and observations written by the test conductor.
- C.11 RELIABILITY, AVAILABILITY, AND MAINTAINABILITY (RAM)- PHASE I.
- C.11.1 RELIABILITY PLAN. The Contractor shall submit a reliability plan with system and component level reliability, availability, and maintainability predictions. The reliability plan shall address reliability growth. The Reliability Plan shall be prepared in accordance with CDRL A011.
- C.11.2 RELIABILITY GUIDANCE. The Contractor shall use sound reliability engineering principles as presented in MIL-HDBK-217, MIL-HDBK-189, MIL-HDBK-781, and MIL-HDBK-338. RAM discussions and tradeoffs shall be documented and presented at the design reviews.
- C.12 HUMAN FACTORS ENGINEERING & SAFETY - PHASE I.
- C.12.1 HUMAN FACTORS ENGINEERING. The Contractor shall use sound Human Factors Engineering (HFE) principles (as presented in MIL-HDBK-759) in developing the design of the ITSS. HFE discussions and tradeoffs shall be documented and presented at the design reviews.
- C.12.2 ENVIRONMENTAL, SAFETY & HEALTH (ES&H). The Government will provide to the Contractor the current LAV FOV Environmental

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Assessment. The Contractor shall use sound safety engineering practices (as presented in MIL-HDBK-764) in the ITSS program, including, but not limited to, the following (Note that the requirements of this section apply only to new or modified components affected by the ITSS and current vehicle components/systems that are affected by integration of the ITSS upgrades):

- Identifying system hazards by conducting safety analyses and hazard evaluations. The analyses shall include both operational and maintenance aspects of the vehicle.
- Controlling or minimizing hazards to personnel or the environment that cannot be avoided or eliminated.
- Ensuring all moving parts, mechanical power transmission devices, exhaust system components, pneumatic components and hydraulic components which present a hazard to personnel, are either enclosed or guarded. Protective devices shall not impair operational functions.
- Ensuring that suitable warning and caution notes are included in operation, maintenance, assembly and repair instructions and that distinctive markings are placed on hazardous components or equipment.
- Tracking hazards until they are eliminated or adequately controlled.
- Documenting the actions taken to eliminate a hazard or reduce the risk of its occurrence.
- Eliminating or reducing hazards through design; thus minimizing any potential retrofit actions.
- Ensuring the severity of personnel injury or equipment damage is minimized in the event of a mishap.

General Requirements. The Contractor shall comply with the Occupational Safety and Health Administration (OSHA) regulation and applicable state and local regulation. The Contractor shall identify the general procedures for disposition and disposal of hazardous waste generated for this effort. The Contractor shall comply with the applicable federal, state and local statutes and regulation relating to protection of the environment and public safety and health. Environmentally preferable, recycled, or recovered materials shall be used to the maximum extent possible in the procurement/manufacture of unique parts provided that the material meets or exceeds the operational and maintenance requirements of the ITSS and the FOLAV.

C.13 ENVIRONMENTAL, SAFETY & HEALTH - PHASE I

C.13.1 SAFETY ASSESSMENT REPORT (SAR). The Contractor shall perform and document a system safety assessment to identify all safety features of the hardware and software design. The assessment shall also identify hardware, software (if applicable to ITSS upgrades) and procedural related hazards that may be present in the system or equipment. This assessment shall be a comprehensive evaluation of the risk of a mishap occurring prior to testing or operation of the system. As a result of any safety analyses, hazard evaluations, Government or independent Contractor testing, the Contractor shall prepare a SAR in Contractor format. The Government will provide to the Contractor the current LAV SLEP SAR for reference purposes. The SAR shall be submitted in accordance with CDRL A012. The SAR shall:

- Briefly describe the ITSS and its components including software as well as other impacted vehicle changes with the ITSS integrated into the LAV-25.
- Provide general physical characteristics of the system and components and describe how the software works in the system. Use photos, diagrams, sketches or drawings as necessary.
- Identify all safety features of the hardware, software, system design and inherent hazards.
- Establish special procedures and/or precautions to be observed by Government test agencies and system operators and maintainers to ensure the safety of personnel and property.
- Summarize the safety criteria/methods used to classify and rank hazards.
- Summarize results of tests and analyses used to identify hazards. Include results of tests conducted to validate safety criteria or requirements.
- Identify hazards that still pose a risk to users, and actions that have been taken to reduce this risk.
- Categorize hazards as to whether they may be expected to occur under normal or abnormal use.
- Annotate any hazardous material generated or used in the system. Provide the appropriate procedures/precautions for packaging, handling, storage, use, transportation and disposal of the material. Include explosive hazard classifications.
- Include applicable Material Safety Data Sheets.
- Identify all reference or source documents used to prepare the report.
- A signed statement from the Contractor indicating that identified hazards have been controlled or eliminated, and the system is ready for operation/test.

C.13.1.1 SAR UPDATES. In the event the vehicle system is modified or procedural changes are made, the Contractor shall update the SAR to reflect those modifications or changes. The Contractor shall submit an updated SAR IAW CDRL A012. After this second SAR delivery, the Contractor shall provide updated SAR change page notices within 30 days after any new modification or change is implemented. In addition, the Contractor shall immediately notify the Government (within 24 hours) via phone or fax if new hazards or increased risk/hazard probability levels are identified while Government testing of the integrated ITSS vehicle (DT and OT) is ongoing.

C.13.2 HEALTH HAZARD ASSESSMENT. The Contractor shall perform and document a Health Hazard Assessment to identify health/environmental hazards and to recommend engineering controls, equipment, and/or protective procedures, to reduce the associated risk to an acceptable level. A health hazard is defined as an existing or likely condition, inherent to the operation, maintenance, transport, storage or use of material/ equipment, that can cause death, injury, acute or chronic illness, disability, or reduced job performance of personnel. As part of this effort, the Contractor shall:

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- Perform analyses to determine if materials cause adverse effects in living creatures.
- Determine if materials pose a present/future threat to the environment.
- Identify if materials cause damage to equipment/property during the life cycle of the system.
- Evaluate and recommend alternative materials that reduce risk levels. Cost considerations shall be part of the evaluation.
- Determine if hazardous wastes are generated and identify controls.

C.13.2.1 HEALTH HAZARD CONSIDERATIONS. Items to be assessed include, but are not limited to:

- Noise: Steady State and Impulse
- Toxic Gases
- Chemical hazards - Address the chemicals identified in the Material Safety Data Sheets to be provided with the Safety Assessment Report.

- Ionizing or non-ionizing radiation.
- Heat and Cold (to include heat stress).
- Shock and vibration to crew members and ammunition.
- Electromagnetic Radiation Effects (EMRE).
- Generation of hazardous wastes.
- Biological hazards.
- Blast overpressure.

C.13.3 HEALTH HAZARD ANALYSIS REPORT (HHAR). The HHAR shall be submitted in Contractor format per CDRL A013. The data for this report shall, as much as possible, be collected from the ITSS upgraded vehicle the Contractor submits for Government testing. The Contractor in his report shall:

- Identify, describe and discuss each potential or actual health hazard issue. Include whether the hazard may be expected to occur under normal or unusual operating, maintenance or storage conditions.
- Recommend actions to eliminate, reduce or control each actual or potential health hazard described.
- Identify hazardous materials by chemical name, common or trade name, NSN (if applicable), physical form and manufacturer/supplier.
- Annotate where in the system or equipment hazardous materials are used.
- Identify the conditions under which hazardous materials pose a health threat.
- Recommend disposal actions for each identified hazardous material.
- List all source materials and references used for preparing the report.

C.13.4 SYSTEM SAFETY WORKING GROUP (SSWG). The SSWG is a chartered advisory group dedicated to addressing safety issues and supporting the Government's System Safety Manager. The primary function of the SSWG is to ensure all safety issues and identified hazards are adequately addressed, to ensure the safe, manned operation of the ITSS upgraded LAV vehicles during Government testing and fielding of the weapon system. The Contractor, major Subcontractors and the Government are active, participating members. At least one Contractor representative shall attend each SSWG. The Government will chair the meetings. The meetings will be held in conjunction with the design reviews (ref. C.7.7, C.9.1, and C.9.2) and should not exceed 4 hours. The SSWG may address any issues related to system safety. Typical Contractor tasks at an SSWG meeting may include:

- Reviewing safety program status.
- Summarizing hazard analysis.
- Presenting incident assessments for system mishaps or malfunctions.
- Presenting status of assigned actions.
- Identifying safety deficiencies.

C.13.5 ENVIRONMENTAL ASSESSMENT. In order to support US Government testing, the Contractor shall perform an Environmental Assessment to determine environmental impacts of the ITSS tests and installation. The results shall be submitted in Contractor format per CDRL A014. The assessment shall contain, as a minimum, an analysis of the possible impacts that the upgrades may have on the environment (personnel, wildlife, atmosphere, water, vegetation, soil) while it is being operated, transported, or stored. Include any hazardous/toxic wastes generated.

C.14 SUPPORTABILITY ANALYSIS - PHASE I.

C.14.1 ITSS INTEGRATED LOGISTICS SUPPORT (ILS) PROGRAM OVERVIEW. The Contractor shall conduct an ILS program in order to plan, manage, validate, execute and deliver logistical data and services for the ITSS Program. The objectives of ILS are to optimize material readiness; provide cost effective logistics support; and identify/evaluate resources required to develop, acquire and manage the ITSS. The Government and Contractor shall evaluate logistics data to support those objectives. A formal schedule review will be conducted at the beginning of PHASE II.

C.14.1.1 The Contractor shall develop and provide Contractor Logistics Support (CLS) for the complete ITSS 3rd through 5th Echelon Maintenance Level to support a 90% system availability.

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C.14.2 INTEGRATED LOGISTICS SUPPORT MEETINGS

C.14.2.1 LOGISTICS REVIEW MEETINGS. The Contractor shall host two (2) Logistics Reviews. The purpose of these meetings is to provide a forum to review the logistics data. Logistics Reviews will address LAV ITSS maintenance, provisioning, configuration management (CM) and TM data. The Contractor shall also address ILS program review and coordination issues in the agenda. Logistics Reviews shall be structured around complete assemblies. Logistics Reviews shall be scheduled to coincide with assigned deliveries of the ITSS database for the items/assemblies being reviewed. Each review shall not exceed 15 working days. The Contractor shall deliver the ITSS database 30 days prior to the Logistics Review in accordance with CDRL A015.

C.14.3 ITSS MAINTENANCE VERIFICATION. The Government shall perform an assessment/physical disassembly of items/assemblies, at the logistics reviews, to verify that the Contractor's ITSS database is consistent with the USMC maintenance concept. The Contractor shall validate the data prior to the Logistics Reviews. The Contractor shall provide the following data as a minimum for each logistics review:

- a. TM pages reflecting ITSS hardware and or LAV interfaces.
- b. Drawings or sketches that identify part numbers and nomenclatures for the purpose of cataloging the items to the DoD inventory system.
- c. Provisioning data reflecting the system in a top-down breakdown structure.
- d. A listing of tools and Test Measurement Diagnostic Equipment (TMDE) required for each operational task and/or maintenance task according to its applicable echelon. The Contractor shall identify the tools as either special or common. Special tools are those not currently available to the USMC (list provided as GFI). The Contractor shall provide a cost estimate for procurement of the special tools in the quantity required for the applicable maintenance echelons.
- e. The Contractor shall ensure that the ILS GFE LAV-25 is available for each Logistics Review. The Contractor shall also make available the applicable ITSS components, spare/repair parts, common tools and special tools, TMDE, support equipment, consumable items and bulk items that were identified during the Contractor's logistics development.
- f. Maintenance task analysis and validation summary.

C.14.4 LOGISTICS DATA DEVELOPMENT. The Contractor shall develop logistics management information (LMI) data that is supported by the Contractor engineering design efforts. MIL-PRF-49506 may be used as guidance. The Contractor shall establish an ITSS logistics database that is consistent with the USMC Maintenance Concept (Attachment 06). The Contractor shall produce and deliver Technical Manuals in accordance with Attachment 07, Technical Manual Contract Requirements (TMCR) and CDRL A015 for the ITSS that detail the operational and maintenance procedures for the ITSS components. The ITSS database shall contain, at a minimum: tools, parts/ components, bulk items, indenture levels, Source Maintenance Recoverability (SMR) Codes, Military Occupational Skills (MOS), and maintenance times to perform each task. Additional database requirements may be identified at the Start of Work Meeting.

C.14.4.1 MANAGEMENT OF LOGISTICS DATA. The Contractor shall maintain and update its logistics documentation. Each update shall be considered as new data for purposes of review, approval, and delivery. Data shall be updated to reflect changes in support requirements resulting from logistics support improvements or corrections resulting from a Government/Contractor analysis of testing data.

C.14.5 MILITARY OCCUPATIONAL SPECIALTIES (MOS). The Contractor shall use existing USMC LAV MOSs when identifying the appropriate MOS for operating and maintaining LAV ITSS. If, however, the Contractor determines that existing USMC LAV MOSs do not meet the requirements for supporting the modifications, then the Contractor shall identify the required MOS. The Government will provide a copy of the USMC Military Occupational Specialties (MCO P1200.7S) as GFI.

C.14.6 PROVISIONING SCREENING. The Contractor shall submit provisioning screening to the Defense Logistics Service Center (DLSC) NLT 45 days prior to the Logistics Review in accordance with CDRL A016. The data shall address complete assemblies for each Logistics Review. The Contractor may use LOGRUN for this effort.

C.14.6.1 PROVISIONING MASTER RECORD (PMR). The Contractor shall develop provisioning data to support the ITSS program IAW MIL-STD 1840 and MIL-PRF-49506, Appendix B. The Contractor shall arrange the provisioning data in a top-down breakdown sequence. MIL-HDBK-502 may be used as a guide. The data shall be delivered IAW CDRL A017. At the SOW meeting the Government will provide the Contractor with the Interactive Computer Aided Provisioning System (ICAPS) software that the Contractor shall use in preparing and delivering the provisioning data.

C.14.7 NOTIFICATION OF TOOLS REQUIRED FOR LOGISTICS REVIEWS. The Government will provide a General Mechanics tool kit. The Contractor shall notify the Government of common tools required for ILS development that are not contained in the GFE tool kits NLT 30 days prior to each Logistics Review. The Government will make every effort to acquire the required common tools for the Contractor prior to the Logistics Review. If the Government cannot provide the common tool, the Contractor shall submit a cost proposal to the Government for approval prior to acquiring the tools. The Contractor shall not delay its ILS development because a common or special tool is not available. The Contractor shall supply all unique/special tools and Test Measurement and Diagnostic Equipment (TMDE) necessary to support the logistics reviews. If a given unique tool or TMDE has a unit price greater than \$5,000, the Contractor shall obtain permission from the Government to procure it.

C.14.8 INITIAL SPARE/REPAIR PARTS. The Contractor shall deliver a listing of spare/repair parts and assemblies in top down breakdown order for government review and approval in accordance with CDRL A018. Listing of parts shall include, as a minimum, Part

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Number, Item Name, Unit of Issue, Quantity per System, Recommended Buy Quantity, Price and Source, Maintenance Recoverability Code (SMRC). Listing shall support ITSS systems for the first 2 years after last production system installation. The Government will review the listing and selected items will be added to the contract in conjunction with exercise of first production option. All parts shall be delivered 17 months after exercise of the first production option. The Contractor and his subcontractors shall agree to full supportability of all parts/ components /assemblies for a minimum of five years from date of last ITSS installation.

C.14.9 SPARE/REPAIR PARTS. The Contractor shall be responsible for providing a system support package of spare/repair parts to the test sites for DT and OT. Spare/repair parts for the initial provisioning of the ITSS shall be supplied under the first production option.

C.14.9.1 SPARE/REPAIR PARTS FOR TEST SUPPORT. The Contractor shall, for the support of the DT and OT, identify and provide those parts and Line Replaceable Units (LRU) in sufficient numbers to support the DT and OT. The Contractor shall ensure that any replacement part not in the system support package at any test site is available at the test site within 48 hours of notification.

C.15 QUALITY ASSURANCE - PHASE I

C.15.1 QUALITY ASSURANCE PROGRAM - Phase I. The Contractor shall develop a QA Program Manual or Plan as applicable to their quality system model. This manual or plan shall be made available to the Government for review upon request. The Contractor's Quality Assurance Program shall be implemented within 120 days after contract award.

C.15.2 QUALITY CONFORMANCE INSPECTION AND TEST PROCEDURES (QCI&TP) FOR LAV IMPROVED THERMAL SIGHT SYSTEM (ITSS). The Contractor shall develop QCI&TP for the inspection and acceptance of each ITSS developed under this contract. The QCI & TP shall be broken out into two parts. Part I shall address inspection and acceptance criteria for the ITSS at the Contractor's facility and Part II shall outline all the inspections and tests required to verify proper installation, integration and operation of the ITSS after being installed into the LAV-25. The QCI&TP shall include the inspection and test controls specified in the drawings, ITSS PD, specifications and any related data required for acceptance of the ITSS. The QCI & TP shall be prepared in Contractor format and submitted to the Government for review and approval in accordance with CDRL A019.

C.15.3 QUALITY ASSURANCE INSPECTION AND ACCEPTANCE REQUIREMENTS. The Contractor is required to perform all the inspections referenced Section E, paragraphs E.7, E.8 and E.9 prior to the start of DT and OT of the ITSS.

C.16 LAV ITSS DEVELOPMENTAL AND OPERATIONAL TESTS - PHASE I

C.16.1 TRAINING. The Contractor shall provide training for the ITSS Developmental Test (DT) and Operational Test (OT): This will include operator and on vehicle maintenance training encompassing troubleshooting procedures to the Line Replaceable Unit (LRU) level and remove and replace tasked for organizational level mechanics. The Training course material shall be in Contractor formats and shall be sufficient to support operator and maintenance training. Copies of the training course materials shall be delivered in accordance with CDRL A021. Courses shall include safety and hazardous instructions. Student instructor ratio shall not exceed fifteen to one for lecture classroom and three to one for hands on instruction involving practical applications. The number of students will not exceed thirty for either DT or OT training classes.

C.16.1.1 DT AND OT (OPERATOR AND MAINTENANCE) TRAINING: This training shall focus on operation, troubleshooting, organizational remove and replace tasks. ITSS operator training shall not exceed 32 hours. A minimum of 24 hours of Infrared (IR) target recognition training will be provided by the Government in conjunction with contractor operational training. Maintenance training shall include the troubleshooting task to the LRU level and will address the removal and replacement of complete systems as well as individual Line Replaceable Units. ITSS maintenance training shall not exceed 40 hours. Separate classes are required for DT and OT and shall be completed, for all students, within two weeks prior to the start of DT or OT event.

C.16.1.2 TEST INTEGRATED PROCESS TEAM (TIPT) MEETING. The Government will conduct regularly scheduled Test Integrated Process Team (TIPT) meeting up until the start of each test (Ref. E.11.1 and E.14.7).

C.16.1.3 SCORING AND ASSESSMENT CONFERENCES. The Contractor shall attend all Scoring and Assessment Conferences scheduled by the Government in support of all DT and OT efforts (E.11.2).

C.16.1.4 TEST DEFICIENCIES. The Contractor shall be responsible to investigate, and provide a Failure Analysis Corrective Action Response (FACAR) to all Test Incident Reports (TIRs) submitted by the Government as a result of DT per the requirements of section E, paragraph E.12.5 (inclusive) in accordance with CDRL A020. The Contractor shall also be responsible for the correction of all deficiencies (Hardware & Software) identified during DT per paragraph E.11.5.3.5 and E.11.5.3.6 of this contract.

C.16.1.5 TEST INCIDENT REPORT (TIR) CLOSEOUT MEETING. The Government shall hold a TIR Closeout meeting per section E, paragraph E.11.3 to determine the status and action required to close all remaining open TIRs.

C.16.2 LAV ITSS DEVELOPMENTAL TESTS.

C.16.2.1 TEST AND EVALUATION REQUIREMENTS. During Phase I, the Contractor may conduct developmental testing as required to verify

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the performance of the ITSS design. Test plans and results of any tests performed by the Contractor to verify ITSS performance shall be made available to the Government at Design Reviews (ref. C.7.7, C.9.1, C.9.2). The Government will conduct Developmental Testing (DT) on a maximum of four (4) ITSS per the requirements specified in section E, paragraph E.10.1 of this contract. Initially, two (2) will be used for laboratory testing. Concurrent with the laboratory test, the remaining two (2) ITSS will be installed on LAV-25s by the Contractor at the Government test site. At conclusion of laboratory test, one (1) ITSS will be installed by the Contractor on a third LAV-25 at the same Government test site. The three (3) will then be used for system level Developmental Test and Operational Test. The remaining ITSS will be returned to the Contractor to support Integrated Logistics Support (ILS) efforts at the Contractor's facility.

C.16.2.2 CONTRACTOR TEST SUPPORT. The Contractor shall provide field service representatives (FSR) to support DT at all test sites for the duration of each test performed per the requirements of section E, paragraph E.11.4 and E.14.5 of this contract. For OT, the Contractor shall be available for on- or off-site technical assistance as required within 24 hours. Interaction with the OT Team is at the discretion of the Government. Contractor shall provide the following support for ITSS testing (Section E):

- System support for on-vehicle components
- Limited Technical Inspection (see C.16.2.4)
- Field Service Support

The Contractor shall provide capable and knowledgeable personnel to support the USMC with on-vehicle maintenance of the ITSS components. The Contractor FSR shall be available to assist during the entire USMC maintenance workday (not to exceed 12 hrs). No maintenance will be performed on weekends unless specifically approved by the Contract Officer Representative (COR).

C.16.2.3 GOVERNMENT FACILITIES. The Government will provide space as required at the DT site(s) for secured storage of system support items and for office facilities. The Government will also provide an office that will have, as a minimum, furniture, electrical hookups, and a telephone line hookup.

C.16.2.4 LIMITED TECHNICAL INSPECTION (LTI) IMPROVED THERMAL SIGHT SYSTEM. The Contractor shall perform LTIs of all the ITSS that are used for training or test upon receipt of the ITSS at the training test site. Prior to the commencement of DT the Contractor shall conduct another LTI of the integrated ITSS and integration components. The Government will conduct an LTI of the vehicle with the ITSS installed. If an ITSS component is missing or requires replacement, the Contractor shall obtain a replacement and install it. Time to conduct the LTI and to condition the integrated ITSS as operational shall not exceed 8 hours per vehicle.

C.16.2.5 SYSTEM SUPPORT TO DT. The Contractor shall provide system support for LAV ITSS DT. System support is defined as providing any required support related to the ITSS configuration for on-vehicle components as well as the integration of the ITSS. The Contractor shall ensure that all replacement parts are available at the test site or delivered within 48 hours of notification. The Contractor shall also provide Technical Manuals (TM) applicable to the ITSS for all tests that include, as a minimum, all ITSS operations and remove/replace maintenance procedures. The Government will provide LAV General Mechanics tools and one set of SL-3 tools (excluding weapons or communication equipment tools) for each ITSS test site location as GFE. The Contractor shall also provide TMs applicable to the ITSS for all tests that include, as a minimum, all ITSS operations and remove/replace maintenance procedures. The Contractor shall conduct an analysis on failed items and will provide the Government the analysis results (CDRL A020).

C.16.3 LAV ITSS OPERATIONAL TESTS.

C.16.3.1 TEST AND EVALUATION REQUIREMENTS. The Government will conduct Operational Testing on three (3) ITSS per the requirements specified in section E, paragraph E.10.1 of this contract.

C.16.3.2 TEST DEFICIENCIES. The Contractor shall be responsible to investigate, and provide a Failure Analysis Corrective Action Response (FACAR) to all Test Incident Reports (TIRs) submitted by PM-LAV as a result of OT per the requirements of section E, paragraph E.11.5 (inclusive) and CDRL A020. The Contractor shall also be responsible for the correction of all deficiencies (Hardware & Software) identified during OT per paragraph E.11.5.3.5 and E.11.5.3.6 of this contract.

C.16.3.3 SYSTEM SUPPORT TO OT. The Contractor shall provide system support for three (3) LAV ITSS during OT as requested by the Government. System support is defined as providing any required support related to the ITSS configuration for on-vehicle components as well as the integration of the ITSS. The Contractor shall provide all unique tools to support the on-vehicle maintenance as well as off vehicle maintenance of the ITSS that is to be performed during OT by the USMC. The Contractor shall ensure that all replacement parts are available at the test site within 48 hours of notification. The Contractor shall also provide TMs applicable to the ITSS for all tests that include, as a minimum, all ITSS operations and remove/replace maintenance procedures. The Contractor shall conduct an analysis on failed items and will provide the Government the analysis results (CDRL A020).

C.16.4 TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT. As applicable, the Contractor shall develop TMDE to support ITSS if the troubleshooting/maintenance capability is beyond the capability of the current LAV TMDE (General Purpose Interface Assembly (GPIA)). The Contractor shall reference the TMDE in applicable ITSS testing/ troubleshooting procedures. The Contractor shall: (1) Ensure that the TMDE has been properly tested against the ITSS components, and that the resulting test/ troubleshooting procedures are validated; (2) Deliver two (2) prototype TMDE units (hardware, software, and/or firmware) and hardcopies of the test/troubleshooting procedures to a Government-designated test site NLT the beginning of DT and OT in accordance with CDRL A022. The Government prefers the full use, upgrade, and/or modification of TMDE currently used to troubleshoot LAVs (e.g. GPIA).

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C.17 PHASE II START OF WORK MEETING. The Contractor shall conduct a Start of Work meeting at his facility no later than 30 days after exercise of the Phase II Production option for approximately 15 government personnel. The Contractor shall present the Phase II Program Management Plan as well as the contract schedule critical path network, the Contract Work Breakdown Structure (WBS), the Risk Management Plan and the Quality Assurance Program Plan.

C.17.1 PRODUCTION COORDINATION MEETINGS. At the start of each phase of the contract, the Government will conduct production coordination meetings with all stakeholders in accordance with C.20.1.

C.17.2 PROGRAM STATUS REVIEWS (PSR). The Government shall conduct program status reviews at the Contractor's facility. During Phase II the Government shall conduct quarterly program status reviews at the Contractor's facility.

C.17.3 PRODUCTION REVIEWS. The Contractor shall conduct a total of four (4) Production Reviews at his facility during Phase II. The Production Reviews shall last no more than one (1) day and will be attended by no more than six (6) Government personnel.

C.18 COST AS AN INDEPENDENT VARIABLE (CAIV) - Phase II

C.18.1 CAIV PLAN. The Contractor shall implement the CAIV plan submitted with its proposal, and update the plan as required through the life of the ITSS program in accordance with CDRL A006.

C.18.2 CAIV INTEGRATED PRODUCT TEAM (CIPT). The CAIV Working Group shall meet periodically (approximately twice a year) to review the CAIV plan and metrics.

C.18.3.3 The Contractor shall report CAIV status progress against goals and metrics at PSRs.

C.19 CONFIGURATION MANAGEMENT (CM)-Phase II.

C.19.1 PRODUCT BASELINE: The Initial Product Baseline establishes the detailed design documentation (Item Detail Specifications) for each CI, including software changes and upgrades. The Initial Product Baseline will be established as indicated in C.7.8. A Physical Configuration Audit (PCA) will be performed on the first production ITSS. The final product baseline shall be established upon successful completion of the PCA on the first production ITSS and any vehicle modifications. Management of the final product baseline shall remain under the control of the Contractor for a period of 1 year after delivery of the last ITSS.

C.19.2 CONFIGURATION CONTROL. The Contractor may use MIL-HDBK-61, and ANSI/EIA-649 and Attachment 05, Government Concept of Operations Integrated Data Environment for guidance in developing ECP and RFD documents. The Contractor shall manage the ITSS configuration baseline as follows:

C.19.2.1 Upon establishment of the initial product baseline, the Contractor shall document all changes to the CI through Engineering Change Proposals (ECPs) or Requests for Deviation (RFD) via the MEARS described in Attachment 05. Electronic delivery of ECPs and RFD under MEARS requires as a minimum completion of mandatory fields on electronic form. Reference the following Data Item Descriptions (DIDs) for additional instructions: DI-CMAN-80639C-Engineering Change Proposal (CDRL A007) and DI-CMAN-80640C-Request for Deviation (CDRL A008).

C.19.2.2 As a minimum, ECPs shall be supported by drawings and other data (e.g., detailed cost proposal data, test data and analyses) as specified in the contract to justify and describe the change and to determine its operational employment characteristics. A summary of any testing done by the Contractor to validate concepts or new technology shall be provided with the ECP. Prepare and deliver in accordance with CDRL A007.

C.19.2.3 Class I ECPs shall require Government approval. The ECP shall also identify changes to the Recommended Repair Parts List (RRPL). The ECP shall identify the date the Government needs to contract for the acquisition of the initial spare parts related to the ECP in order to acquire Production Prices. If necessary, draft Modification Instructions (MI) shall be submitted with the ECP for information only and will not be judged by the Government for acceptability. If the Government approves the ECP, a final MI may be required. If required, a final MI shall be delivered 30 days after contract modification. MIs shall be prepared in Contractor format, reference CDRL A007.

C.19.2.4 Class I ECPs shall have a Contractor assigned priority code on it. The priority code shall be used in determining the relative speed at which an ECP is to be reviewed by the Government. The priorities for the ECPs shall be Emergency (E), Urgent (U), and Routine (R). Once a problem that requires a configuration change has been identified to, or by, the Contractor, monthly status on the development of the solution shall be provided until the formal ECP has been submitted. The status of solution shall be sent to PM-LAV. The following are the Government's processing times after an ECP has been received in the PM LAV office:

- Emergency ECPs shall be processed within 48 hours
- Urgent ECPs shall be processed within 21 calendar days

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- Routine ECPs shall be processed within 30 calendar days.

C.19.2.5 The Government will provide initial, limited training on the MEARS system if requested by the Contractor. The Contractor shall give the Government 30 days advance notice if training is required.

C.19.2.6 CLASS II ECPs AND REQUESTS FOR DEVIATION (RFD). Class II ECPs and Requests for Deviation (RFD) shall be submitted as appropriate (CDRL A007 and CDRL A008) electronically via the MEARS. Both require Government approval. The Government is allowed 15 days for review. The Contractor shall resubmit any Class II ECPs or RFDs as Class I ECPs, when directed by the Government. Submission of those reclassified configuration changes to Class I ECPs shall also be via MEARS.

C.19.3 CONFIGURATION STATUS ACCOUNTING (CSA). The Contractor shall establish and maintain a Configuration Status Accounting (CSA) system. As a minimum, the CSA system shall provide the following data:

- a. Identification of the currently approved configuration baseline.
- b. Status of all proposed configuration changes and the effectivity point of all approved configuration changes.
- c. Historical data on the evolution of the configuration baseline.
- d. A Configuration Status Accounting and Engineering Report (CSA&ER).
- e. The status of all Class I and II ECPs and Requests for Deviation shall be included in the CSA&ER. The Government may request a CSA&ER no more than quarterly, up to the date of last vehicle modification.

The CSA&E and ER shall be prepared and delivered in accordance with DI-CMAN-81253A-Configuration Status Accounting Information, CDRL A026; and DI-CMAN-80463-Engineering Release Record, CDRL A027.

C.19.4 VERIFICATION OF CONFIGURATION ITEMS.

C.19.4.1 PCA PLAN AND INDENTED BILLS OF MATERIAL (IBOM). The Contractor shall deliver an ITSS PCA Plan in accordance with CDRL A028. The plan shall meet the requirements of Section C.19, Inclusive. The PCA Plan shall be used as a basis for conducting the audit. The Contractor shall ensure that all documentation identified in the PCA Plan to conduct the PCA(s) is available at the start of the PCA. The initial PCA Plan shall be delivered electronically to the Government in conjunction with the IBOM; the PCA will be performed on the first production vehicle. The Government shall provide comments back to the Contractor within 30 days.

C.19.4.2 As part of the PCA plan the Contractor shall also deliver to the Government an Indented Bill of Material (IBOM) (ref. CDRL A023) NLT 30 days after exercise of first production option. The IBOM shall represent all ITSS items. The list shall constitute the PCA Candidates List. Within 30 days from receipt of the IBOM, the Government will advise the Contractor which items they intend to audit. Within 45 days after receipt of Government comments, the Contractor shall notify the Government when these items are available to audit.

C.19.5 PHYSICAL CONFIGURATION AUDIT. The Government will conduct one Physical Configuration Audit (PCA) on the ITSS items (i.e. components, assemblies, and subassemblies). The PCA will, if necessary, audit component interfaces with the vehicle. The GFE ILS vehicle shall be used as a platform to perform the PCA. The PCA shall be the formal examination of the as-built configuration of the identified item against its design documentation. The PCA shall be conducted at the Contractor's or subcontractor's site on the selected candidates. The audit will be conducted on the first production unit of the selected candidates. The PCA plan will be used as the basis for the audit(s). The Government will initially audit no more than 25% of the entire PCA candidates. In order for the Contractor to pass the audit, 95% of audited items must be acceptable at the first attempt. Acceptable is defined as the as-built hardware matches the design documentation (drawing.) If the pass/fail criterion is met, the Contractor shall correct identified deficiencies. If the pass/fail criteria of 95% is NOT met, the Contractor shall review the entire ITSS TDP and make all necessary corrections to ensure that the as-built hardware matches the drawings. The Government reserves the right to perform additional audits of 15% of the remaining PCA candidates if the first audit is unsuccessful until a 95% level is achieved.

C.19.5.1 PCA SUPPORT. The Contractor shall provide the necessary materials, tools and resources to effectively support the PCA. The Prime Contractor may have their vendors available at the PCA.

C.20 PRODUCTION - PHASE II. During Phase II of this program, the Contractor shall manufacture and assemble the approved ITSS design for integration in the LAV-25. The ITSS installation effort shall be accomplished in accordance with the schedules in Section F, and the Contractor shall maintain Total System Responsibility in accordance with C.1.4.

C.20.1 CONTRACTOR COORDINATION OF PRODUCTION EFFORTS - PHASE II. Within 30 days after exercise of the first ITSS production option, the Contractor shall meet with PM-LAV, MARCORLOGBASE, and field unit personnel to finalize Phase II installations. The parties shall review the most efficient timing of the installation tasks, in order to minimize schedule risk and maximize overall process efficiency. Within 30 days after the meeting, the Contractor shall submit an updated Manufacturing/Installation Plan (ref. C.4.5 and CDRL A009) reflecting agreements reached at the meeting.

C.20.2 Contractor personnel shall remove the current DIM36TH sight system on vehicles located at field units (i.e. those not located at either MCLB Albany or Barstow). MARCORLOGBASE Albany will provide the necessary storage and containers for the removed DIM36TH. The Contractor shall prepare the vehicle for, and install, the ITSS in these LAV-25 vehicles. This shall include all accepted modifications to the vehicle required to install the ITSS in the vehicle. The Contractor shall install all components of the

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ITSS including all hardware, software, cables, harnesses, and interfaces. This shall include all cable/harness routing as well as those components included by the Contractor and accepted by the Government as additional operational capabilities i.e. FCC, TCCC, LDM, or TMI. The Contractor shall supply all installation hardware including common hardware required for installation and mounting of components. Field unit installation effort will only be done as proposed and as detailed in the Contractor's Manufacturing/Installation Plan and approved by the Government.

C.20.2.1 The Contractor shall be required to perform any installation vehicle preparation effort not performed by Government personnel. The Contractor shall not be required to repair or refurbish the vehicles; only perform effort related to installation of the ITSS. For installation on vehicles located at MCLB Albany and Barstow, the Contractor shall coordinate the installation with the ongoing IROAN effort in accordance with the Contractor's Manufacturing/Installation Plan.

C.20.2.2 Inspection and acceptance of the ITSS after installation shall occur at the place of installation in accordance with E.13. The Contractor shall be required to ship the ITSS and any equipment or material required for installation to the installation site.

C.20.2.3 The Contractor shall be required to manage the ITSS, equipment, and material at the site, and shall be responsible for replacing any items that are missing or damaged with new items at no additional cost to the Government. The Government will provide, at the active duty battalion sites, secure storage facilities for material, space and facilities for installation, and office facilities for Contractor personnel. The Contractor shall be allowed to use any equipment/ tools/facilities available at each site for the installation effort, but shall be required to supply any equipment/tools that are unique to the installation of the ITSS and are not available at the site. The Government shall provide all Petroleum, Oil, and Lubricants (POL) necessary to support the installation and final inspection effort. The Contractor shall provide a list to the Government of any equipment required to install the ITSS into the LAV turret.

C.21 STORAGE OF ITSS - PHASE II. The Contractor is responsible for storing Improved Thermal Sight Systems at its facility from acceptance until shipment to the point of installation. The Contractor is responsible for replacing any parts in storage that are damaged or lost while in storage with new parts at no additional cost to the Government. There shall be no cannibalization of parts from stored items without prior written approval of the PCO. The ITSS option prices shall include any costs related to storage.

C.22 PRODUCTION PROGRESS REPORT - PHASE II. The Contractor shall prepare and deliver on a monthly basis a report that displays the production Line of Balance (LOB) status in accordance with CDRL A029. The report should include the status of production activities related to the ITSS and its individual LRU's and vehicle modification components. The points of application within the manufacturing process of components and assemblies included in the LOB report shall be included in the production flow chart of the next higher assembly.

C.22.1 The Production Progress Report, covering the first through last day of each calendar month, shall be submitted as of the end of the first full month that ITSS deliveries are required (CDRL A029). Reports are due by the fifth working day of the following month (CDRL A029). The report shall be submitted each month thereafter with a final report submitted as of the end of the month the Contractor delivers the final vehicle under this contract (CDRL A029).

C.22.2 During periods when no production activities relative to the above components and assemblies are on-going, the report shall provide the status of long lead procurements to support the manufacturing of these components and assemblies. This information shall include long lead item part number and description, procurement lead-time, order date(s), quantities ordered, quantities received and status of the balance quantity on order. The LOB report shall include in a tabular form a description of the production activities at the critical process control points and the interrelated lead-times between the control points. The use and color-coding of symbols in the report is optional. The contract schedule for the LOB Objective chart for the components and assemblies produced by any subcontractors and vendors will be in accordance with the contracts/purchase orders with the prime Contractor.

C.23 ENVIRONMENTAL, SAFETY & HEALTH - PHASE II

C.23.1 SAFETY ASSESSMENT REPORT (SAR) Updates. In the event the vehicle system is modified or procedural changes are made, the Contractor shall update the SAR submitted in Phase I (Ref C.13.1) to reflect those modifications or changes. SAR updates shall be in the form of change pages, submitted within 30 days after any new modification or change is implemented. In addition, the Contractor shall immediately notify the Government (within 24 hours) via phone, fax, or email if new hazards or increased risk/hazard probability levels are identified while Government testing of the vehicle (PVT) is ongoing. (CDRL A012).

C.23.2 HEALTH HAZARD ANALYSIS REPORT (HHAR) Updates. HHAR updates shall be submitted in Contractor format per CDRL A013 as configuration changes occur.

C.23.3 SYSTEM SAFETY WORKING GROUP (SSWG) Meetings. SSWG meetings will continue to be held in conjunction with the Phase II Production Reviews (Ref C.17.3).

C.23.4 ENVIRONMENTAL ASSESSMENT UPDATES. In order to support US Government Phase II PVT testing, the Contractor shall review the Environmental Assessment submitted in Phase I (ref C.13.5) and to determine if an update is required based on configuration changes from Phase I. If required, the update shall be submitted in accordance with CDRL A013 as change pages to the original submittal.

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C.24 QUALITY ASSURANCE - PHASE II

C.24.1 QUALITY ASSURANCE PROGRAM. If the production option is exercised, the Contractor shall update their QA Program Manual or Plan, which was established in C.15.1, inclusive as required. The Contractor's updated Quality Assurance Program shall be implemented within 120 days after Phase II contract award.

C.24.2 QUALITY ASSURANCE INSPECTION AND ACCEPTANCE REQUIREMENTS.

C.24.2.1 CONTRACTOR INSPECTION AND ACCEPTANCE OF PRODUCTION ITSS. The Contractor shall be responsible for performing all the required inspections on each ITSS at the Contractor(s) facilities prior to delivery. These inspections shall be performed per the requirements of section E, paragraphs E.13.9, E.13.9.1, E.13.10, E.13.11, E.13.12, and E.14.2 (Inclusive). The Contractor, prior to the Government providing conditional acceptance shall correct all deficiencies reported as a result of these inspections. Final acceptance shall be provided upon successful completion of First Article Test (E.14.1 - E.14.6) of the ITSS into the LAV-25.

C.24.2.2 INSPECTION AND ACCEPTANCE OF ITSS SYSTEM INSTALLATION. Upon installation of the ITSS into each LAV-25, an integration inspection shall be performed per the requirements of Section E, paragraph E.13.11. After the ITSS is successfully integrated into each LAV-25 and all deficiencies are satisfactorily corrected, Government acceptance shall be provided.

C.24.3 PRODUCT QUALITY DEFICIENCY REPORTS (PQDR). The Contractor shall be required to investigate, conduct a failure analysis and provide a corrective action response to all PQDR's (SF-368) submitted by the user per the requirements of section E, paragraph E.13.12 of this contract (CDRL A032).

C.24.4 TEST DEFICIENCIES. The Contractor shall be required to investigate, and provide a Failure Analysis Corrective Action Response (FACAR) to all Test Incident Reports (TIRs) submitted by the Government for response as per section E, paragraph E.14.6 in accordance with CDRL A020. The Contractor shall also be responsible for the correction of all deficiencies (Hardware & Software) identified during PVT per paragraph E.14.4 and E.14.4.1 of this contract.

C.24.5 FIRST ARTICLE TEST (FAT) REQUIREMENTS. Final acceptance of the ITSS shall be obtained upon successful FAT. FAT consists of satisfactory completion of a First Product Sight Inspection (FPSI), Ref. C.24.5.1 and the satisfactory completion of Product Verification Testing (PVT), Ref. C.24.6. Section E, paragraph E.14 provides the detailed requirements for FAT.

C.24.5.1 FIRST PRODUCTION SIGHT INSPECTION (FPSI). FPSI shall be conducted by the Contractor at the Contractor's facilities per the requirements of section E, paragraph E.15.2 (inclusive) and the FPSI requirements of the ITSS Purchase Description (Attachment 01). The Contractor shall be required to correct all deficiencies discovered during FPSI and submit a final report in accordance with CDRL A033 to the Government for conditional acceptance (Ref. E.14.2.2 & E.14.2.3). Upon satisfactory completion of FPSI, the First Production Sight shall be retained at the Contractor's facility as the manufacturing standard (Ref. E.14.2.4).

C.24.6 PRODUCTION VERIFICATION TESTING (PVT). After successful completion of FPSI the Government shall select four (4) ITSS from the first lot produced and subject them to PVT. PVT shall be performed per the requirements of section E, paragraph E.14.3 (inclusive) and the ITSS Purchase Description (Attachment 01).

C.24.6.1 CONTRACTOR TEST SUPPORT. The Contractor shall provide field service representatives (FSR) to support PVT at all test sites for the duration of each test performed per the requirements of section E, paragraph E.11.4 and E.14.5 of this contract. Contractor shall provide the following support for ITSS testing (Section E):

- System support for on-vehicle components
- Limited Technical Inspection (see C.28.1)
- Field Service Support

The Contractor shall provide capable and knowledgeable personnel to support the USMC with on-vehicle maintenance of the ITSS components. The Contractor FSR shall be available to assist during the entire USMC maintenance workday (not to exceed 12 hrs). No maintenance will be performed on weekends unless specifically approved by the Contract Officer Representative (COR).

C.24.6.2 GOVERNMENT FACILITIES. The Government will provide space as required at the PVT site(s) for secured storage of system support items and for office facilities. The Government will also provide an office that will have, as a minimum, furniture, electrical hookups, and a telephone line hookup.

C.24.6.3 SYSTEM SUPPORT TO PVT. The Contractor shall provide system support for LAV ITSS PVT. System support is defined as providing any required support related to the ITSS configuration for on-vehicle components as well as the integration of the ITSS. The Contractor shall ensure that all replacement parts are available at the test site within 48 hours of notification. The Contractor shall also provide Technical Manuals (TM) applicable to the ITSS for all tests that include, as a minimum, all ITSS operations and remove/replace maintenance procedures. The Government will provide LAV General Mechanics tools and one set of SL-3 tools (excluding weapons or communication equipment tools) for each ITSS test site location as GFE. The Contractor shall also provide TMs applicable to the ITSS for all tests that include, as a minimum, all ITSS operations and remove/replace maintenance procedures. The Contractor shall conduct an analysis on failed items and will provide the Government the analysis results (CDRL A020).

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- C.24.6.4 SPARE/REPAIR PARTS. The Contractor shall be responsible for providing a system support package of spare/repair parts to the test sites PVT. Spare/repair parts for the initial provisioning of the ITSS shall be supplied under the first production option.
- C.24.6.5 SPARE/REPAIR PARTS FOR TEST SUPPORT. The Contractor shall, for the support of PVT, identify and provide those parts and Line Replaceable Units (LRU) in sufficient numbers to support PVT. The Contractor shall ensure that any replacement part not in the system support package at any test site is available at the test site within 48 hours of notification.
- C.24.6.6 SCORING AND ASSESSMENT CONFERENCES. The Contractor shall attend all Scoring and Assessment Conferences scheduled throughout and at the conclusion of PVT (Ref. E.14.7).
- C.24.6.7 TEST INCIDENT REPORT (TIR) CLOSEOUT MEETING. Upon conclusion of PVT, the Government shall hold a TIR Closeout meeting per section E, paragraph E.11.3 to determine the status and action required to close all remaining open TIRs.
- C.24.6.8 REFURBISHMENT OF PVT ITSS. Upon completion of PVT, the Contractor shall refurbish each ITSS used during PVT IAW the requirements specified in section E, paragraph E.14.8 (inclusive).
- C.25 VEHICLE INSTALLATION - PHASE II. The Contractor shall implement the installation plan developed during Phase I. The Contractor (using the Contractor's employees) shall complete installation of the ITSS. Installation shall occur at sites to be identified by the Government.
- C.26 ENGINEERING DATA FOR PROVISIONING (EDFP) - PHASE II. The Contractor shall deliver the EDFP in accordance with CDRL A032. The EDFP shall, at a minimum, provide:
- a. Technical identification of items for maintenance support considerations.
 - b. Source of supply and/or manufacturers of the items.
- C.26.1 EDFP is required in the order of preference shown below:
- a. Government or recognized industry specifications or standards.
 - b. Engineering drawings.
 - c. Commercial catalog illustrations and/or descriptions.
 - d. Sketches or photographs with brief descriptions of dimensional, material, mechanical, electrical or other descriptive characteristics. When sketches or photographs are provided for an assembly, a parts list shall be provided.
- C.26.2 INDENTED BILL OF MATERIAL (IBOM). This IBOM shall be prepared in Contractor format. The IBOM shall contain, as a minimum, item number, item name/ description, and quantity. The IBOM shall be prepared in indenture level sequence for the ITSS in the LAV-25. Prepare and deliver in accordance with CDRL A023.
- C.26.3 SUMMARIZED BILL OF MATERIAL (SBOM). This SBOM shall be prepared in Contractor format. The SBOM shall contain, as a minimum, item number, item name/ description, the revision date of the specified item, the revision number of the specified item, and the total quantity per item for the ITSS program. The SBOM shall be organized in alpha-numeric order. Prepare and deliver in accordance with CDRL A025.
- C.26.4 SUPPLEMENTAL TDP DATA. The Contractor shall make available unscheduled TDP data (drawings, parts lists, and Bills of Material) when requested by PM-LAV. The Government may request delivery of up to 50 drawings and 5 Bills of Material, in hard copy or electronic format, per year. The Contractor shall make available these supplementary data deliverables within 20 days after receipt of Government request. Reference CDRLs A023, A024, and A025.
- C.27 SUPPORT DATA - PHASE II.
- C.27.1 CORRECTION OF DATA AND DELIVERABLES. The Contractor shall deliver corrected TM pages and PMR data thirty days after each Logistics Review in accordance with CDRLs A015 and A017.
- C.27.2 INTEGRATED DATA DIGITAL ENVIRONMENT (IDE). Electronic Access to Data. Unless otherwise specified, all data deliverables shall be in provided in digital format in accordance with the formats specified in the LAV Government Concept of Operations (GCO) (Attachment 05). For reports that are delivered on a frequent (monthly or bi-monthly basis), it is preferable that the Contractor provide the Government access to its data on-line through a Contractor Integrated Technical Information System (CITIS) that interfaces with PM-LAV's Integrated Digital Environment (IDE). If a CITIS is used, the Contractor shall be responsible for developing report templates that comply with the requirements for those CDRLs/Data Items, and for ensuring that the data is updated by the required delivery date for those CDRLs/Data Items.
- C.27.3 COMPUTER ACCESS. The Contractor shall provide on-line computer access in order to update and correct the provisioning, and TM data at each Logistics Review. The Contractor shall update its database in accordance with Government direction provided at the Logistics Reviews.

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C.28 Training - Phase II.

C.28.1 INSTRUCTOR AND KEY PERSONNEL TRAINING (I&KP). The Contractor shall conduct operator and maintenance training. Operator training shall last no more than eighty (80) hour and shall cover only ITSS hardware and the interfaces with the LAV-25. The course shall be provided to no more than twenty-five (25) Marine instructors who are qualified at all echelons of maintenance. Training shall not exceed ten (1) hours per day. Maintenance training shall cover second through fifth echelons of maintenance as required under a USMC Organic Maintenance Concept. Under a Contractor Logistics Support (CLS) approach, the Maintenance training shall cover operator through second echelon. The Government will provide two LAV-25s with ITSS installed for training. The Contractor shall provide all ITSS unique special tools and parts required to support the training. The target start date for training is February 2005. Training materials shall be submitted in accordance with CDRL A021.

C.28.2 NEW EQUIPMENT TRAINING (NET). The Contractor shall conduct training for a maximum of two classes each at the Marine Expeditionary Force (MEF) I, II, and III. Training shall coincide with installation of ITSS hardware at the organizations (MEFs) to be trained (see Section F). Training shall be limited to a maximum of forty (40) students per class. Operator training shall not exceed eighty (80) hours (ten, eight hour days); maintenance training shall not exceed 120 hours (fifteen, eight hour days) and shall cover only the ITSS hardware and vehicle interfaces. Training shall be conducted during the workweek. Training materials shall be submitted in accordance with CDRL A021.

C.29 CONTRACTOR LOGISTICS SUPPORT - PHASE II. The Contractor shall provide CLS in accordance with Attachment 009.

C.30 PACKAGING, HANDLING, SHIPPING & TRANSPORTATION (PHS&T) ISSUES - PHASE II. The Government will notify the Contractor when designated Government personnel will attend the Logistics Reviews to discuss PHS&T issues NLT 15 days before the applicable Logistics Review. The Contractor shall develop and prepare packaging using best commercial practices consistent with the shipping and storage requirements of the PD. PHS&T issues are addressed in detail in Section D.

C.31 Maintenance of GFE Vehicle. The Contractor shall perform weekly and monthly preventative maintenance and corrective maintenance through 2nd echelon of the GFE vehicle located at the contractor's facilities as required in the -10 and -20 manuals for the LAV-25. In addition, the Contractor shall drive each vehicle approximately 10 miles per week. The Contractor shall document the findings and actions taken for each task and provide a copy in contractor format to PM-LAV by NLT 7 days after the end of each month for activities conducted in that month. The Contractor is not required to perform maintenance on components above 2nd echelon. Any maintenance higher than 2nd echelon should be identified to the government. The government will be responsible for maintenance beyond the 2nd echelon as well as performing required semi-annual and annual vehicle service. The government will provide the POL and the requisite hardware necessary for the contractor to perform crew level maintenance as outlined in the -10 and -20 manuals. Secondary repairable requirements shall be performed by the Government.

C.32 LAV-25 Vehicle Power Study. The contractor shall analyze the LAV-25 turret power while the handgrips are engaged. There is a 10.3 V drop in turret voltage when the handgrips are engaged. During the test, fully charged battery shall be used, the engine shall be idle, and no FLIR shall be installed. The requirement for proper operation of the ITSS system is a DC voltage of between 18 and 30 Volts DC. The contractor shall analyze the inrush of current to the hydraulic pump (located in the turret) that causes a drop in turret voltage. The contractor shall prepare a report providing insight into some of the issues and provide recommended solutions.

*** END OF NARRATIVE C 001 ***

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SECTION G - CONTRACT ADMINISTRATION DATA

LINE	PRON/	OBLG STAT/	INCREASE/DECREASE		CUMULATIVE
<u>ITEM</u>	<u>AMS CD</u>	<u>ACRN</u> <u>JOB ORD NO</u>	<u>PRIOR AMOUNT</u>	<u>AMOUNT</u>	<u>AMOUNT</u>
0005AA	T132T5254K	AC 2	\$ 0.00	\$ 288,872.00	\$ 288,872.00
0006AA	T132T5234K	AC 2	\$ 0.00	\$ 97,928.00	\$ 97,928.00
			NET CHANGE	\$ 386,800.00	

SERVICE	NET CHANGE	ACCOUNTING		INCREASE/DECREASE
<u>NAME</u>	<u>BY ACRN</u>	<u>ACCOUNTING CLASSIFICATION</u>	<u>STATION</u>	<u>AMOUNT</u>
Marine Corps	AC	17 351319M7KE2500080200674432DC1555A00003MPR3AG8		\$ 386,800.00
NET CHANGE				\$ 386,800.00

PRIOR AMOUNT		INCREASE/DECREASE	CUMULATIVE
<u>OF AWARD</u>		<u>AMOUNT</u>	<u>OBLIG AMT</u>
NET CHANGE FOR AWARD:	\$ 8,179,374.00	\$ 386,800.00	\$ 8,566,174.00